

1 **Original Research: *Multiple Sclerosis and Related Disorders***

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4 **The unresolved role of the neurologist in providing dietary**
5 **advice to people with multiple sclerosis**

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18 **Highlights**

- 19 • Dietary advice provided to patients ranged from none to counselling about specific
20 diets
- 21 • Neurologists felt they had little influence over their patients' dietary habits
- 22 • Neurologists could direct patients to evidence-based resources (national dietary
23 guidelines)
- 24

25 **Abstract**

26 **Background:** People with MS often make dietary changes after diagnosis with the aim of
27 slowing disease progression. Although people with MS commonly use the internet for
28 information on diet and MS, neurologists are their preferred source of information. However,
29 little is known about what dietary advice is provided by neurologists.

30 **Objectives:** To explore the perceptions of neurologists about diet and MS, and to identify
31 the type of dietary advice they provide to their patients with MS.

32 **Methods:** In this exploratory qualitative study, 11 semi-structured interviews were conducted
33 with neurologists in Western Australia. Audio files were transcribed verbatim, and transcripts
34 were thematically analysed using a general inductive approach.

35 **Results:** Four themes emerged: 1) juggling the evidence on the role of diet in MS; 2)
36 acknowledging the risks and benefits of specific diets; 3) distancing from the diet 'gurus'; and
37 4) the unresolved role of the neurologist in providing dietary advice.

38 **Conclusion:** Neurologists could meet their patients' expectations by providing evidence-
39 based dietary advice, such as promoting the benefits of diets that adhere to national dietary
40 guidelines, and being prepared to explain potential risks of restrictive diets. Information
41 about healthy eating needs to be targeted to people with MS.

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43 **Keywords:** Diet; dietary advice; dietary guidelines; multiple sclerosis; nutrition; neurologists

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50 1. Introduction

51 Despite the lack of scientific evidence for any therapeutic diet(1), approximately 40% of
52 people with MS (pwMS) report making dietary modifications after being diagnosed(2-4),
53 often with the aim of slowing disease progression(5). For pwMS, the internet is the most
54 common source of information on diet(6, 7), where a number of specific diets are promoted.
55 Many of these diets are restrictive, i.e. they do not satisfy the minimum nutrient requirements
56 according to national dietary guidelines. A recent scoping review highlighted the wide range
57 of non-evidenced-based online dietary advice promoted for pwMS, much of which was
58 contradictory(7). Popular restrictive diets vary markedly in composition and include the
59 Swank Diet (saturated fat restricted to <15 g/day; unsaturated fat restricted to <20-50 g/day;
60 limited red meat)(8), the Overcoming MS Recovery Program (low in saturated fat; moderate
61 in seafood, avocado and nuts; no meat, dairy, egg yolks, or refined foods)(9), and the Paleo
62 diet (high in meat, vegetables, and fruits; no dairy, legumes, eggs, or grains)(1). PwMS find it

63 difficult to judge the credibility of online dietary information, but generally trust professionals
64 with reputable titles, such as doctors (even when the diets are not evidence-based)(5).
65 Although the internet is commonly used for information on diet, neurologists are the
66 preferred and most trusted source of health information for pwMS(10, 11) and, therefore,
67 should be prepared to offer evidence-based dietary advice, and/or refer to a dietitian where
68 required.

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70 In Australia, people newly diagnosed with MS have reported that their neurologist provided
71 either no information, or very little information, about diet(5). When dietary advice was
72 provided, it was likely to be general and not tailored to MS(5); however, pwMS consider
73 generic health information to be of little use(12). PwMS want neurologists to proactively
74 provide information about all aspects of the disease(13), since accurate information can help
75 with decision-making and self-management of the disease(14). Given that little is known
76 about the dietary advice provided by neurologists to pwMS, we aimed to explore the
77 perceptions of neurologists about diet and MS, and to identify the type of dietary advice they
78 provide to their patients with MS.

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80 2. Methods

81 We conducted an exploratory qualitative study, with methods guided by a general inductive
82 approach (where raw data was used to derive themes)(15). The study was conducted in
83 Perth, Western Australia (WA), between June 2019 and March 2020, and was approved by
84 the Human Research Ethics Committee at Curtin University (approval number HRE2019-
85 0179). Prior to commencing interviews, participants were given written study information
86 (containing information on the expected duration, study aims, and anonymity) and provided
87 written, informed consent. We adhered to the Standards for Reporting Qualitative Research
88 (SRQR)(16).

89

90 2.1 Participant recruitment

91 We estimated that there were 40-50 neurologists working in WA at the time of
92 recruitment(17). Neurologists who were diagnosing and/or treating pwMS in WA were
93 eligible. There were no exclusion criteria. We used purposive and snowball sampling
94 methods(18). After discussions with MS Western Australia (MSWA) and the project
95 stakeholder advisory group, we created an initial list of potential participants from both public

96 and private health sectors. Additional participants were identified by using an online search
97 engine (Google), and participants were asked at the conclusion of the interview for names of
98 other neurologists to contact. Neurologists were contacted by email or phone, and invited to
99 participate in a single interview. We encouraged neurologists to participate even if they
100 provided little or no dietary advice to their MS patients.

101

102 2.2 Data collection

103 The interview topic guide (Table 1) was developed with input from both the research team
104 and from relevant literature(19, 20). Given the time constraints for the neurologists, we
105 aimed to complete the interviews within 30 minutes. Two authors (R.D.R., nutritionist and
106 PhD student, and A.B., dietitian and qualitative researcher) piloted the topic guide with one
107 neurologist for interview duration and suitability of the questions. The topic guide was not
108 altered after piloting; hence, the transcript of the pilot interview was included in the analysis.
109 At the beginning of the interviews, the study aims were discussed and demographic
110 information was collected using a short questionnaire. Interviews were audio-recorded,
111 transcribed verbatim, and rechecked for accuracy by R.D.R. The interviewer (R.D.R.) made
112 notes after each interview, outlining emotional responses, key phrases, and topics to probe
113 in subsequent interviews. For reflexivity(18), R.D.R. reflected on her assumptions. To ensure
114 that comments reflected the practices and opinions of the neurologists, transcripts were
115 posted to participants for member checking(18). No amended transcripts were returned.
116 Recruitment continued until thematic saturation was reached (i.e. no new themes emerged
117 from the data)(21).

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119 **Table 1** Interview topic guide

Topics	Discussion guide
Diets for MS	In your clinical experience, what is your take on the role of diet and MS? (Probe: to elaborate further; why/why not?) Can you tell me about any diets that you have heard about or read about for MS? There are some people with medical training, including in neurology, that promote specific diets for MS. What are your views on that?
Provision of dietary advice and information	When you are diagnosing a patient with MS, what emphasis do you place on diet; where does dietary information sit? Is there anything you routinely discuss about diet with your patients? (Probe why/why not?) How often would you say that your patients have questions for you about diet?

- What (if anything) do they typically ask of you?
- What information do you provide about diet, and why? (If none, then why not?)
- Are there any resources you give out, or direct patients to?
 - What [additional] resources would you like to be able to refer client to? I.e. where should your patients get nutrition information from?

If a patient were to come to you, and insist on following a specific diet for their MS, and choosing to do a diet over taking medication, how would you typically respond to that? (Follow-up: how would you respond if that patient agreed to take the recommended medication, but was still insistent on following the specific diet?)

- What do you perceive to be some of the benefits to them following a specific diet if they are continuing to take their recommended medication?
- What do you perceive to be some of the risks to them following a specific diet if they are continuing to take their recommended medication?

As their neurologist, what degree of influence do you think you have on your patients' dietary habits if you were to make suggestions or recommendations?

Conclusion	Anything else you would like to add that I have not covered?
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122 2.3 Analysis

123 Commencing after the first interview, the interviewer (R.D.R.) used inductive thematic
 124 analysis methods(15) to analyse the transcripts. The transcripts were read in detail to
 125 identify sections of text that related to the objectives, creating 39 categories in the initial
 126 coding stage. We used literal (direct observations from the data) and interpretive (inferred
 127 from the data) coding techniques(22). For the second stage of coding, categories were
 128 reduced and refined by grouping those with similar meanings, resulting in 15 categories.
 129 Final revision involved reducing redundant categories and creating relevant subcategories.
 130 This resulted in four overarching themes.

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132 The research team discussed emerging themes throughout the analysis process as a means
 133 of peer debriefing(18). This encouraged new perspectives from those who were external to
 134 the data collection and not immersed in the data, ensuring credibility of the findings. A.B. (an
 135 experienced qualitative researcher) listened to all audio recordings, and L.J.B. acted as an
 136 external auditor (was not involved in data collection or preliminary analysis). Final themes
 137 were confirmed by the research team. NVivo software (version 12.6.0, QSR International Pty

138 Ltd) was used for qualitative data management. Stata software (version 16.0, StataCorp LP,
139 College Station, TX, USA) was used to analyse participant characteristics.
140

141 3. Results

142 3.1 Participants

143 We interviewed 11 neurologists: eight interviews were conducted in person and three were
144 conducted using Skype (version 7.58, Microsoft Corp., Luxembourg). The mean interview
145 duration was 26 minutes (range, 18-42 minutes). Participant characteristics are presented in
146 Table 2. The majority were male (64%), with equal representation across the public and
147 private sectors (36% public; 36% private; 27% a combination of both). The median number
148 of years since qualifying was 12 years (range, 8-27 years). The proportion of pwMS treated
149 by neurologists in the previous three working days ranged from zero to 50% (median, 5%).

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158 **Table 2** Characteristics of the participants

Sex, <i>n</i> (%)	
Male	7 (63.6%)
Female	4 (36.4%)
Health sector, <i>n</i> (%)	
Public	4 (36.4%)
Private	4 (36.4%)
Both	3 (27.3%)
Location of practice	
Perth ¹ metropolitan only	6 (54.5%)
Perth ¹ metropolitan and regional Western Australia	5 (45.5%)
Country of medical training ² , <i>n</i> (%)	
Australia	9 (81.8%)
Other	6 (54.5%)

Number of years practicing medicine	
Median (IQR, range)	22 (14, 19-38)
Number of years as a qualified neurologist	
Median (IQR, range)	12 (13, 8-27)
Percentage of MS patients seen in previous three working days	
Median (range)	5% (0-50%)

159 IQR, interquartile range

160 ¹Capital city of Western Australia

161 ²Participants could record multiple countries

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163 3.2 Themes

164 Inductive thematic analysis resulted in four overarching themes: 1) juggling the evidence on
 165 the role of diet in MS; 2) acknowledging the risks and benefits of specific diets; 3) distancing
 166 from the diet ‘gurus’; and 4) the unresolved role of the neurologist in providing dietary advice.
 167 Quotes to support themes are presented in Table 3.

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169 **3.2.1 Theme 1 Juggling the evidence on the role of diet in MS**

170 In most cases, the dietary advice given by neurologists to pwMS was informed by credible
 171 sources, such as peer-reviewed journals, MS conferences, and dietitians. However, when
 172 healthy eating was mentioned, the descriptions were vague; “*I just tell them to eat well*” (N7),
 173 and there was no reference to an evidence-based resource, such as the *Australian Dietary*
 174 *Guidelines*. The advice was inconsistent with no apparent clinical consensus. Some
 175 neurologists relied on anecdotes from other patients, or on their own personal food
 176 preferences, to inform the dietary advice they provided.

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178 The viewpoints of the neurologists on the role of diet ranged from sceptics (did not see a role
 179 for diet in general) through to those who counselled patients with information about specific
 180 diets (e.g. Mediterranean, vegan, or the Overcoming MS Recovery Program diet). Some
 181 neurologists were “*deliberately vague*” (N1) when giving dietary advice. Reasons for
 182 providing little or no dietary advice included limited knowledge about diet/nutrition or being
 183 unsure what the right advice was, given the lack of evidence. Neurologists wanted to see
 184 more robust evidence in the field of diet and MS before they could be confident enough to
 185 make any dietary recommendations or to counsel for/against specific restrictive diets.
 186 Neurologists who emphasised the importance of diet cited general health, weight

187 management, vascular health, and a sense of wellbeing, as reasons for giving dietary
188 advice.

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190 There was very little discussion on the role of diet in managing the symptoms of MS, and
191 any such discussion was limited to the symptoms of constipation and fatigue. A few
192 neurologists avoided discussing diet if their patients indicated they were already following a
193 restrictive diet. Contradicting patients with information that the diet was not evidence-based
194 was considered confronting, and was avoided. Rarely, neurologists were openly supportive
195 of their patients trying specific diets, and spent time helping them make an informed choice.

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207 **Table 3** Participant quotes to support themes

Theme 1 Juggling the evidence on the role of diet in MS

"I might say, 'You know, I've had some patients actually come off treatment and done really well on that [particular diet]'. " N3

"Until there is some concrete evidence about [a] specific diet, um, I, I would, I'd be a sceptic." N5

"A lot of people do go on to specific diets and they ask me, you know, what I recommend. And I'm deliberately vague, because I don't really know for sure. There's not enough evidence to be confident of what diet is, is appropriate." N1

"[When] the patients come to me, I never really give them much information on diet. I just tell them to eat well." N7

"People don't like to be contradicted. So if someone thinks a low-fat diet will cure my MS, there's no point in me saying that's a pile of crap." N10

"I'd have to look at the diet, see what's known about the diet, and then discuss it with the patient. So I am, I am open minded to this." N4

Theme 2 Acknowledging the risks and benefits of specific diets

“General cardiovascular health, general cerebrovascular health, [...] not being overweight, ah, just general health issues. Which actually translates into a good immune system, and looking after yourself.” N2

“If I think they're very limiting, so some go on like a vegan one, ah, I just ensure that they get all the vitamins. I prescribe them multivitamins or get them to buy them.” N8

“Suddenly someone who can't touch or eat anything at anyone's place, you're changing how you present to your friends, to your family, to your children. Ah, and I think that's a problem. You want a diet that integrates with society.” N2

“Well must be your fault. It must be that you didn't stick to the diet'. Which can become damaging for peoples ah, you know, mental health, if they think the MS getting worse is their fault.” N11

“Yeah, I mean, the thing with neurological conditions, including MS is, things feel like they're out of control OK. You're losing control of your limb or your vision or whatever. So, so sometimes diet is a form of control.” N8

“Some patients that are overweight with MS can, can lose weight on those diets, and obesity is a risk factor for um, poor prognosis in MS.” N11

Theme 3 Distancing from the diet 'gurus'

“[People] strongly believe what they're told by, you know, by certain, you know Terry Wahls¹ or George Jelinek² because they are very, you know, they're very sort of um, concrete. And 'this is this is right, and correct', and people like that certainty.” N1

“It all has to be science-based. It can't be religion-based, it can't be faith-based. You know, we've got to collect evidence, find the evidence.” N10

“I think it's very common for people to be caught up in the zeitgeist, and be, 'Okay, I'm gonna go vegan, dairy-free, gluten-free', even though they don't have intolerance to those things.” N1

“Dr Terry Wahls in North America, same idea, slightly guru paradigm, someone comes along and says I've got MS and I eat bananas, and you know, cured MS.” N10

Theme 4 The unresolved role of the neurologist in providing dietary advice

“I don't know that I have that much influence over what people do in terms of their diet.” N11

“Usually unless they ask directly about it [diet], I don't address it. There's just not enough time in the day.” N9

“They might have the intent to stick to a very restrictive diet, but mostly they can't [...] they self-protect in a way.” N8

“Honestly, I would wait for the patient to bring it up, um, except for vitamin D, I don't bring up anything else about diet.” N5

“[If] it gets to a point where I think that they need like really good dietary advice, I will send them to a dietitian.” N4

“[If patients ask] whether any particular type of diet would be helpful or not [...] my usual suggestion is that you can try that and you can see if it works.” N5

208 N[x], neurologist ID code

209 ¹Dr Wahls promotes the Wahls Paleo Protocol

210 ²Professor Jelinek promotes the Overcoming MS Recovery Program

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3.2.2 Theme 2 Acknowledging the risks and benefits of specific diets

213 Nutrient deficiencies and unintended weight loss were the most commonly mentioned risks

214 associated with specific diets, although probing was needed to extract this topic of

215 discussion. For patients where nutrient deficiencies were a concern, half of the neurologists

216 said they would recommend a dietary supplement. Patients who were committed to following

217 a restrictive diet were rarely referred to a dietitian. Only one neurologist mentioned ordering
218 blood tests to ensure their patients on restrictive diets were not suffering from nutrient
219 deficiencies. Any potential deleterious effects on mental health were rarely discussed. A few
220 neurologists considered restrictive diets to be socially isolating, and two discussed the guilt
221 felt by pwMS if they strayed from the diet. Those neurologists noted that patients often
222 blamed their relapses on poor adherence to their chosen diet.

223

224 Most neurologists acknowledged that certain diets could be beneficial, including low-fat,
225 Mediterranean, vegan, and restrictive (e.g. Paleo) diets, as they were likely to be healthier
226 than the patient's previous diet. Commonly cited benefits of such diets included increased
227 energy levels, improved heart and/or brain health, weight loss, having a sense of control,
228 and generally feeling better.

229

230 **3.2.3 Theme 3 Distancing from the diet 'gurus'**

231 Given the lack of evidence for altering the disease course, most neurologists were
232 dismissive of the restrictive diets. However, they thought that their patients considered the
233 dietary advice from the "gurus" (N10) as clear, concise, and trustworthy. The language used
234 when referring to restrictive diets and their promoters was distancing and dismissive, with
235 references to pwMS having faith and belief in the 'gurus'.

236

237 The neurologists were more likely to discuss restrictive diets than to discuss what constitutes
238 a healthy diet. However, since non-evidence-based restrictive diets were seen to reflect the
239 "zeitgeist" (N1) of the time, they were disregarded by neurologists as fads that come and go.
240 As a result, not all neurologists engaged in discussions about diet with their patients, and
241 some were unaware of which restrictive diets were popular with pwMS.

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243 **3.2.4 Theme 4 The unresolved role of the neurologist in providing dietary** 244 **advice**

245 The role of the neurologist in providing dietary advice was uncertain. More than two-thirds
246 believed they had very little influence, or even no influence, when it came to providing
247 dietary advice to their patients. In contrast, they believed the diet 'gurus' to be very
248 influential. Time constraint was a common reason for not discussing diet in any detail.

249

250 Neurologists recognised the importance of autonomy for their patients, and acknowledged
251 that diet was a way for pwMS to have a sense of control. It was generally accepted that their
252 patients' compliance to restrictive diets would wane over time. As such, the neurologists
253 dismissed any potential risks. Hence, discussing the pros and cons of restrictive diets was
254 not considered a priority.

255

256 Many neurologists felt it was not their role to provide any dietary advice other than general
257 healthy eating information, but even so they rarely referred to the *Australian Dietary*
258 *Guidelines*. Some neurologists did not provide any dietary guidance. Unless a patient
259 specifically enquired about diet, it was often not mentioned. The tension surrounding the role
260 of the neurologist in providing dietary advice was further amplified by the limited, and often
261 conflicting, evidence for the role of diet in MS. In contrast to disease-modifying therapies,
262 there are very few randomised controlled trials assessing diet and MS progression, making it
263 hard for neurologists to judge what impact diet has on MS. Although providing dietary advice
264 was not considered part of their role, only a few neurologists directed patients to MS
265 organisations or dietitians for dietary assessment and counselling.

266

267 4. Discussion

268 This is the first study to explore the perceptions of neurologists about diet and MS, and
269 identify the type of dietary advice they provide to their patients. A strength of the study was
270 that we interviewed neurologists with a range of experience, who were consulting in both the
271 metropolitan and regional areas of WA, and in both public and private health sectors. In
272 summary, we found that the dietary advice provided to patients was inconsistent, with the
273 neurologists juggling the conflicting evidence around diet and MS (theme 1). A range of risks
274 and benefits associated with the specific diets promoted for pwMS were acknowledged
275 (theme 2). By using dismissive language and religious expressions, the neurologists
276 distanced themselves from the 'gurus' who promote restrictive diets (theme 3). In light of the
277 first three themes, we found that the role of the neurologist in providing dietary advice was
278 ultimately unresolved (theme 4).

279

280 The neurologists in our study did not always follow an evidence-based approach when
281 providing dietary advice. Given the conflicting evidence around diet and MS, there was no

282 clear consensus in the dietary advice provided by neurologists, despite MS organisations
283 encouraging a diet in line with national dietary guidelines(23). This is consistent with a study
284 of family physicians(24), where the physicians deviated from evidence-based medicine when
285 the preferences of their patients conflicted with the evidence. In addition, when there is no
286 clear consensus in the medical literature, patient perspectives are critical for enabling
287 physicians to make decisions without restricting patient autonomy(24, 25).

288

289 Discussions about diet focussed on specific diets: some enabled pwMS to meet their nutrient
290 requirements (e.g. Mediterranean diet), while others did not and were considered restrictive
291 (e.g. Paleo diet). The *Australian Dietary Guidelines* were not mentioned as an example of a
292 healthy diet, and were not considered to be a diet that could benefit pwMS. Given that less
293 than 4% of Australians meet the recommendations of the *Australian Dietary Guidelines*, it is
294 likely that following these guidelines would be a significant dietary change for pwMS(26). For
295 pwMS, potential benefits of following the *Australian Dietary Guidelines* include reduced risk
296 of co-morbidities (such as type 2 diabetes and cardiovascular disease, which increase the
297 risk of disability progression for pwMS(27)), weight management, less constipation, and
298 better general health(28). Such healthy eating could promote a sense of control for pwMS,
299 while avoiding the risks associated with restrictive diets (e.g. nutrient deficiencies(29) and
300 financial difficulties, since such diets have been described as “expensive”(5)). The
301 neurologists did not consider nutrient deficiencies to be an issue, as they perceived
302 compliance to such diets to be low. Nevertheless, doctors should actively monitor the
303 nutritional status of pwMS who follow diets that are known to be restrictive and potentially
304 limiting in specific nutrients(30).

305

306 Few neurologists in our study discussed dietary modifications as a way for their patients to
307 potentially manage their symptoms. Given that pwMS experiment with diet as a means of
308 symptom management(5, 31), not addressing the potential for diet to manage MS symptoms
309 may be incompatible with patients’ expectations. In addition, the potentially detrimental
310 effects on mental health from following restrictive diets were rarely discussed. This may also
311 be misaligned with patient expectations, since pwMS have reported social isolation from
312 strict adherence to restrictive diets, and a fear of failure (worsening symptoms) if they stray
313 from the diet(5).

314

315 Neurologists felt they had little influence over the dietary choices of their patients. This is
316 contrary to previous literature on the influential nature of neurologists: pwMS value the
317 perspectives of their neurologist on a range of information (beyond medical advice), and
318 view them as a source of hope for therapeutic advances(13). Neurologists are the most
319 important, reliable, and preferred source of MS information(11, 13, 32). Our findings suggest
320 that neurologists may underestimate their influence regarding diet, since pwMS want
321 information on all aspects of their disease management, including diet(11).

322

323 Overall, neurologists considered the provision of dietary advice (beyond “eat well”) to be
324 outside their role. This is consistent with oncologists, who also think providing dietary advice
325 is outside their role(33). This viewpoint does not match the perceptions of their patients:
326 insufficient dietary advice provided by neurologists may be considered by pwMS as a lack of
327 knowledge about diet(5), and a lack of reliable resources can negatively affect patient
328 engagement(34). The neurologists were dismissive of the so-called diet ‘gurus’ (where ‘guru’
329 was used in a disparaging way, as a person with knowledge who advocates for their
330 particular theory(35) and has a financial interest). Nevertheless, they thought ‘gurus’ were
331 influential, since they provided definitive dietary advice that gave hope to pwMS.

332 Neurologists should not underestimate their degree of influence when providing consistent,
333 evidence-based dietary advice. Clear advice could enable neurologists to be as influential as
334 the ‘gurus’. This would maintain their authority as the experts, while giving their patients
335 hope.

336

337 We applied a number of techniques to ensure rigour in this study(36); however, there are
338 some limitations. There is the potential for self-selection bias in the participant sample,
339 where those with an interest in diet may have been more willing to participate. We attempted
340 to overcome this by encouraging participation from a range of neurologists, regardless of
341 whether they provided dietary advice or not. Our findings may not be generalizable outside
342 of Australia, since other countries may have specific clinical practice guidelines with respect
343 to diet and MS.

344

345 5. Conclusion

346 PwMS prefer to receive information about MS from their neurologists than from any other
347 source. Neurologists could meet the expectations of their patients with MS by providing

348 evidence-based dietary advice. They could direct patients to resources such as the
349 *Australian Dietary Guidelines* and highlight the ways that this diet may be beneficial, while
350 discussing the potential risks of restrictive diets and referring patients to dietitians. Future
351 resources could be developed to help neurologists illustrate the potential benefits of the
352 *Australian Dietary Guidelines* for pwMS. Further research is needed to elucidate how
353 neurologists could provide dietary advice within their current time constraints, and improve
354 their self-perceived influence regarding giving dietary advice.

355

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360

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