MANAGING THE OVERWEIGHT NEUROLOGY PATIENT: CLINICAL STRATEGIES

Lawrence J. Cheskin, MD

ABSTRACT

Neurologic therapeutics are the primary cause of significant weight gain for neurology patients. When prescribing a drug, the physician weighs the benefit of the drug against the risks—serious side effects and potential drug-drug interactions. Weight gain is often not considered a serious side effect. Even modest amounts of weight gain, however, entail health risks. From the patient's perspective, weight gain can seriously impair health-related quality of life, which may severely impact adherence to a drug regimen. Studies have shown weight gain is a major factor in nonadherence to antiepileptic drugs, antiseizure drugs, tricyclic antidepressants, and atypical antipsychotics. Neurologists need not be trained in obesity management to help prepare patients for the additional challenges of being prone to weight gain before beginning a drug regimen. They may also serve as coach in helping the weight-gaining or overweight/obese patient to identify ways to control weight; a summary of recommended clinical strategies is reviewed here.


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ABSTRACT

Neurology patients are no more or less overweight, on average, compared with other patient types. Some patients who are developmentally disabled, have rare neuroendocrinopathies, or have experienced a change in physical activity due to illness, however, may be more prone to weight gain. Practice demographics may also result in a more overweight population (ie, predominantly poor socioeconomic strata and certain ethnic populations); however, there is no reason to expect that neurology patients are at greater risk for obesity.

Medications are a primary cause of significant weight gain for many neurology patients. Neurologists must therefore assume all of their patients are at risk for weight gain with the medications they commonly prescribe. Children with an initially high body mass index (BMI) may be more prone to weight gain with valproate, but weight gain with neurologic agents is generally independent of starting weight.

SETTING TREATMENT PRIORITIES

As with treatment of any condition, the prescribing physician weighs the benefit of a pharmacologic agent against its risks—serious side effects and potential drug-drug interactions. Another important factor is health-related quality of life (HRQoL), which is of utmost importance to patients but may be overlooked in the focus on treating the specific disorder or disease. Neurologists may monitor whether seizures are adequately controlled, for example, but the epilepsy patient is concerned about symptoms as well as HRQoL. Weight gain is one of the most important influences on HRQoL, because of both obesity's

* Based on a presentation given by Dr Cheskin at a symposium titled “Therapeutically Induced Weight Gain in Neurology Patients: Metabolic Consequences and Management Strategies.”

† Director, Johns Hopkins Weight Management Center, Associate Professor of Medicine and Human Nutrition, Bloomberg School of Public Health, Johns Hopkins University, Director, Gastroenterology Division, Johns Hopkins Bayview Medical Center, Baltimore, Maryland.

Address correspondence to: Lawrence J. Cheskin, MD, 2360 W Joppa Road, Suite 205, Lutherville, MD 21093. E-mail: cheskin@jhmi.edu.
adverse effect on vitality and health and the exaggerated value placed on body image and weight in our society. As an anecdotal example, some patients start smoking to avoid weight gain, fully knowledgeable of the health risks associated with smoking. For schizophrenic patients, HRQoL correlates directly with weight gain.3

HRQoL is also important to the physician because weight gain has an enormous impact on adherence. The noncompliance rate for antiepileptic drugs is 54% to 82%—one fourth to two thirds due to adverse effects, with weight gain being a common adverse effect of many antiepileptic agents.4 With atypical antipsychotics, 50% to 90% of nonadherence is due to weight gain; for tricyclic antidepressants, 48% is due to weight gain.5,6

If drugs causing weight gain must be used, it is critically important to address the subject of weight gain immediately. Patients who gain weight unexpectedly may become easily frustrated and unhappy with their treatment and physician. In a study of 143 patients with chronic schizophrenia, the importance of a good alliance with the physician was shown in a 74% adherence rate with drug therapy vs 26% adherence when the relationship was characterized as “fair” or “poor.”7 Patients look to their treating physician for guidance; when uncomfortable or unsettling issues are addressed up front, the patient is more likely to trust the physician and follow his or her recommendations.

### Clinical Strategies for Preventing and Managing Weight Gain

A first step is to ask the patient to monitor their weight weekly and to inquire about their weight at each office visit. A weight gain of more than 5 lbs should be considered significant, both clinically and cosmetically. Regardless of the magnitude of the weight gain, if the patient is distressed, a change in medication should be considered. If changing medication is not feasible, a frank and clear discussion is necessary for the patient to accept why they will need to adjust their lifestyle to counteract the excess weight. It is important for the patient to accept this, rather than feel they are being forced into a situation—a crucial underpinning of a strong therapeutic alliance.

Although the neurologist may be untrained in obesity treatment, a close therapeutic relationship with the patient is already established. The neurologist is the recognized expert for the patient, sometimes even acting as the primary care practitioner. The interest and support of the neurologist will therefore matter greatly. Neurologists also offer access to weight-control experts and specialists who would not normally be accessible.

Clinical strategies for managing weight gain are summarized below; additional practical information on managing overweight and obesity in the office or clinic setting can be found in the National Heart, Lung and Blood Institute (NHLBI) Practical Guide

Table 1. BMI Conversion Chart

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<th>Weight (lbs)</th>
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</table>

BMI = body mass index.

**ASSESSING OBESITY IN CLINICAL PRACTICE**

BMI is expressed in metric units (weight [kg]/[height (m)]²). Table 1 converts height and weight in inches and pounds to BMI. Overweight is defined in the NHLBI practice guidelines as a BMI of 25 to 29 kg/m². Obesity is defined as a BMI of 30 kg/m² or higher and morbid obesity as a BMI of 40 kg/m² or more. As discussed in Dr Bloomgarden’s article, visceral fat is more detrimental to health than adipose deposits in other areas of the body. Visceral fat independently predicts risk factors and morbidity; waist circumference is the best and easiest measure of visceral fat. For men, high health risk is associated with a waist circumference of more than 40 inches; for women, more than 35 inches.8

**PILLARS OF WEIGHT CONTROL**

Although researchers continue to explore neuroendocrine responses to excess or inappropriate food consumption or excess weight, there remain many tangible factors individual persons can control to lose weight and restore energy balance (calories consumed vs calories expended). Weight control begins with preventing weight gain. Failing that, successive steps can include diet, behavior modification, increased physical activity, pharmacotherapy, surgery, and maintenance. Inclusive in any discussion of weight control is not only patient education, but also careful consideration by the physician of the type of medication being prescribed.

Portion control is also critically important, even with low-energy-density foods. A concept many of my patients have found helpful is the “marginal return on the calorie”—the first bite of food is the best. If food is considered as a pleasurable experience, each additional bite offers a bit less satiety and a bit less marginal satisfaction. So spreading the calories across different foods and controlling the portions may provide more total pleasure and fewer calories. Similarly, a gradual change of taste buds is an important concept in dietary therapy. Patients will find when they persist in eating lower-calorie and lower-fat foods (or any different food), they start to enjoy, and often ultimately prefer, them.

Controlling dietary fat is important for several reasons. Direct epidemiological evidence shows an association between dietary fat and obesity. Countries with the lowest percentage of dietary fat also have the lowest obesity rates. Fat is efficiently stored by the body. Carbohydrates and proteins are used for energy first, with excess placed in storage, for which the body has limited storage capacity; unused dietary fat goes directly to storage, and the capacity for storage is essentially unlimited. Fat is highly palatable and calorically dense; it is therefore more difficult to control consumption.

**BEHAVIORAL STRATEGIES**

Inappropriate eating cues are often a major factor in weight gain. In our society, we eat not simply to satisfy the hunger signal; we often eat because of boredom, stress, or the desire to take advantage of a bargain (eg, “supersizing”). Working with patients to identify some of these inappropriate cues can help them to identify and eliminate unwanted and unnecessary calorie sources. Stress cues can be managed through addressing the source of stress or at least journaling about it to release the internal tension. Boredom cues can be neutralized by keeping a list of alternate activities handy (eg, chores that should be done, going for a walk).

Similarly, environmental control (eg, keeping only healthy foods at hand) and avoiding sabotage by well-meaning family members, friends, and/or coworkers...
are also of critical import. People wishing to control or lose weight can plan ahead to avoid these potential obstacles (eg, packing lunch for work). By taking a few minutes to discuss these strategies with the patient, an idea not previously considered by the patient is offered and the trust and therapeutic alliance is enhanced.

Binge-eating disorder is gaining greater recognition and understanding, although it is not yet a formal psychiatric diagnosis. It is characterized by consuming large quantities of food in a fixed period of time (more than 3 episodes per week) with no purging or compensatory behavior (as in bulimia nervosa). Ironically, it seems to be highly prevalent among subjects seeking weight-loss treatment. Binge-eating disorder is a loss of control of food consumption and is treated differently from general obesity.12

**Exercise Strategies**

Although physical activity offers clear benefits in terms of cardiovascular fitness and muscle strength, it is more effective as an adjunct to dietary modifications for weight loss and weight maintenance than as a primary strategy. Overweight and obese patients, particularly those not accustomed to exercise, may also be intimidated by beginning an exercise program. The definition of exercise can be broadened to include progressive walking, “lifestyle exercise,” and fidgeting and incidental activity. Walking is especially effective because anyone can do it almost anywhere, no special equipment is needed, and participants experience positive reinforcement in terms of increased stamina within weeks of starting.

“Lifestyle exercises” are gaining greater attention and include taking stairs instead of elevators, parking farther away in a parking lot, etc. If consistently followed, these seemingly small modifications to the many labor-saving devices in our modern society may be equivalent to a workout at the gym. Even fidgeting can expend excess energy (up to 800 calories per day). For weight control, the intensity of exercise is not as important as the amount of calories (energy) expended overall. More formal programs of building muscle through strength training may be helpful for motivated patients because muscle raises the resting metabolic rate, thus expending extra calories, even at rest.

Running a marathon expends roughly 2600 calories. To lose 1 pound of fat, 3500 calories must be expended, so only two thirds of a pound is lost by running 26 miles. Exercise promotes weight loss by preferentially depleting fat stores for energy expenditure, notably visceral adipose tissue, which reduces obesity-related comorbidities. Obesity-related conditions may ameliorate even without weight loss (eg, blood pressure reduction).

<table>
<thead>
<tr>
<th>System</th>
<th>Mechanism</th>
<th>Examples</th>
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<tr>
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<td>Phenylpropanolamine, Phentermine</td>
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<tr>
<td>CNS</td>
<td>Serotonergic, increase serotonin release and decrease serotonin reuptake</td>
<td>Dextroamphetamine, Fenfluramine</td>
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<tr>
<td>CNS</td>
<td>Nonadrenergic and serotonergic, block norepinephrine, serotonin, and dopamine reuptake</td>
<td>Sibutramine</td>
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</table>

**Table 2. Obesity Pharmacotherapy**

**Figure. Intentional Weight Loss and Reduction in Mortality**

Data from Williamson et al.15

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CNS = central nervous system.
The Institute of Medicine recommends 60 minutes of moderate exercise or activity per day to successfully control body weight. For many people, that is a bigger time commitment than they are willing or able to make for a formal exercise program. The exercise strategies discussed here, however, help to accumulate the recommended time of activity. In conjunction with the dietary and behavioral changes, weight can be controlled, though not without sustained effort.

The published long-term success rate for weight loss is not encouraging. Studies have shown that with diet alone, 75% regain most of the weight lost by year 1, and 85% to 90% regain most of the weight by year 2. With combination diet and behavior modification, 71% regain the weight within 30 months with average weight regain greater than initial weight by year 5. With a combination of diet, behavior modification, and exercise, 58% regain the weight by year 2. Thus, any encouragement a patient receives over long-term therapy is helpful. For those with life-threatening conditions associated with obesity, several medications are available that act either systemically in the central nervous system to reduce appetite or in the gastrointestinal tract to block fat absorption (Table 2).

Perhaps the biggest motivator for weight loss is its effect on mortality. In a study of more than 43,000 US white women who had never smoked, intentional weight loss (ie, at least 20 pounds within 1 year) was associated with a 25% reduction in all-cause and cardiovascular mortality and a 35% reduction in cancer, with a 50% reduction in obesity-related cancers and a more than 40% reduction in diabetes-related conditions (Figure). Unintentional weight loss (ie, fewer than 20 pounds or loss occurring over more than 1 year) was generally associated with small to modest decreases in mortality.

CONCLUSION

Neurologists, although not trained in obesity management, have numerous strategies to prevent or manage weight gain caused by or associated with neurologic agents. Perhaps most important is to discuss openly and frankly the risk of weight gain before therapy is initiated to help prepare the patient for necessary lifestyle changes. The physician-patient partnership is the foundation for any clinical strategy for managing weight and therefore adherence to any neurologic drug regimen. As the patient’s “coach,” follow-up and care are the most important skills a neurologist can offer.