**SHANNON LANDRY**
UD78372NU87584

**INTEGRATIVE NUTRITION**

# Integrative Nutrition – A Whole Person Approach to Improving Health and Preventing Illness

**ATLANTIC INTERNATIONAL UNIVERSITY**
**HONOLULU, HAWAII**
**FALL 2022**

**September 30, 2022**

## ‘Table of Contents

## Introduction

In modern society, we have the technology to be more connected as a species than ever before. Whereas historically, health-related issues were treated as singular issues, advances in research have demonstrated the interconnectedness between mental, physical, and emotional health. Unfortunately, integration of services is still in its infancy, and these health-related issues are often still viewed in silos in the medical, psychological, and nutritional fields. For example, it's abundantly clear that many of the leading causes of death and disease are caused by environmental and/or behavioural factors. Incidences of cardiovascular disease, diabetes, obesity, and cancer are increasing with every passing year, yet the current medical model focuses on treating these chronic conditions only once they have caused damage (high blood pressure, heart attack, stroke, etc), rather than preventing it. Likewise, even after the medical issues have been identified and treated, the topic of improving or preventing further incidences through a healthy diet and lifestyle are rarely discussed in depth.

We can no longer ignore the impact of nutrition and physical activity on our health. Studies have estimate that 70% of primary-care medical visits stem from psychosocial factors (Anton, 2015). Research has also demonstrated that chronic illnesses such as diabetes, cardiovascular disease, obesity, and substance abuse require behavioral health interventions for best outcomes (Katon et al, 2010).

The term “Integrative Nutrition” has different meanings in different settings, though many features overlap. This essay will examine Integrative Nutrition a holistic (whole-person) approach, though there also exists a medical approach to integrative nutrition. A medical approach, as one might expect, would stem from a healthcare professional or service.

From a medical perspective, integrative nutrition combines principles of medical nutrition therapy with functional medicine to provide education and support for diet and lifestyle recommendations. This can include dietary changes, lifestyle modifications and

physical activity recommendations, specific meal timing, medical/lab testing, and medical interventions. This form of Integrative nutrition is especially useful for preventive care to optimize health for individuals with chronic disease, obesity, cancer, thyroid disorders, and digestive disorders (Centers for Integrated Health, 2022).

A holistic approach, to be discussed in more detail, would typically be used by practitioners such as naturopaths, nutritionists, dieticians, or health/wellness coaches. The focus is on the whole-person and incorporates many psychosocial factors, such as assessment of the interrelationships that exist between diet, environmental, biological, and lifestyle factors. The goal is for the clinician to identify behaviours and target specific issues to promote the client's optimal whole-body functioning through nutrition and lifestyle choices. Within my own practice as a nutritionist and fitness coach, I take much of the same approach, in that I consider many factors in the individual's life that may affect their progress and I try to address each piece.

Integrative nutrition can be considered a form of preventative care developed to combat increasingly high levels of chronic disorder while promoting healing and whole mind and body wellness. Throughout this essay, we will examine the effects of nutrition on mental, physical, and emotional health.

**What is Being Integrated?**

As nutrition clinicians, we can take an integrative approach by considering the many different bio-psycho-social factors that impact a person's health and behaviours. Integrative nutrition incorporates factors such as physical health, physical activity, psychological and emotional wellbeing, stress, family life, financial situation, personal goals, habits and behaviours, and more. There are many environmental and genetic factors that must be considered in order to create an effective plan based on the whole person. Rather than simply looking at a client's diet, a clinical will identify risk and protective factors that could contribute to success and/or inhibit progress.

Risk factors include (but are not limited to):

- Lack of knowledge/education about nutrition
- High levels of stress
- Financial instability
- Chronically ill
- Poor family relationships or lack of support
- Lack of physical activity
- Untreated mental health issues

Protective factors include (but are not limited to):

- In generally good health
- Coachable/willing to learn
- Physically active or willing to increase physical activity
- Good support system
- Financial stability
- Access to support services/resources
- Low levels of stress and/or good stress management skills

This allows for a deeper understanding of the individuals strengths and needs, as opposed to simply prescribing a generic meal plan based on recommended dietary guidelines. Interventions involved in or resulting from integrative nutrition planning include recommending specific foods, meal timing, recommendations for physical activity, collaboration with health care providers, nutrient analysis though blood work, medication interactions, education about nutrition, collaboration or referrals to psychosocial supports, and supplement suggestions.

**Impacts of Nutrition on the Whole Person**

While the effects of nutrition on physical, cognitive, emotional, and psychological wellbeing are far reaching and cannot be understated, it is beyond the scope of this essay to list them all. As such, I will discuss the primary implications of integrative nutrition on aspects health and wellbeing that I observe and address within my own practice. These aspects are: mental health, physical health, physical activity, and education. I will also discuss interventions for improving upon those areas using nutrition. Recognizing and addressing these factors will assist a practitioner to create a plan that is individualized, holistic, and comprehensive, thereby increasing the client's

chances of success at reaching their goals. First, we will look at an example of the many aspects of a person that should be considered for a holistic, integrated approach to nutrition.

**Why is Integration Important?**

When it comes to health, there are many factors that contribute to someone's wellness and they are often correlated and/or compounding. For example, let's take a look at my client, Kate, who came to me for assistance with her diet. Kate is a 51-year-old woman. She has a husband, two teenage children, and works as an elementary school principal. She sits at a computer for most of the day. A former athlete, Kate has found it difficult to deal with her recent weight gain of 15lbs. Though not obese, at 5'4 and 155lbs, her BMI would indicate that she is overweight. She exercises at home 4 days per week for about 30 minutes and this typically entails some low-moderate intensity weightlifting plus some indoor cycling. Kate was recently passed up for a promotion she felt she deserved, and this has caused some additional stress. She indicates that her nutrition is usually pretty good, but she probably doesn't eat enough during the day and then snacks at night. On the weekends, she says she drinks wine and eats a lot of junk food. Kate doesn't take any medication, but her blood pressure is slightly elevated. She's been feeling very bloated lately as well. Her goal is to lose 15-20lbs.

Traditionally, a Nutritionist may have just looked at Kate's body stats and goals and created a diet plan for her. The diet plan may or may not have been restrictive and would have likely been in a relatively large caloric deficit, since Kate wanted to lose the weight as quickly as possible. Unfortunately, in my experience, these types of diets just don't work. Clients are typically very motivated to lose weight in the beginning, but after a few days following the plan, the motivation wanes and they revert to their old eating habits. This can happen for a few reasons. The individual may be consuming to few calories that eventually they are so hungry that it results in binge eating, following by feelings of guilt and failure. It can also happen due to lack of preparation if the client did not set aside enough time to plan and make their meals, which results in impulse eating.

If the individual is experiencing stress in their lives, this may serve as a distraction from meeting their goals. Likewise, if the meal plan is generic and not tailored to their unique needs, tastes, and schedules, they may be unable to stick with it. For this reason, I take a very personalized approach to each nutrition plan I create. To do this, I have all clients complete a detailed consultation form. Within the form I am looking for information on:

- Age
- Sex
- Weight
- Goals
- Trends in their weight (have they gained weight recently or has it crept up slowly; have they gained and lost a lot of weight several times, etc).
- What they do for work (sitting, standing, heavy lifting, etc)
- What their work schedule is
- How often they exercise
- How long do they exercise and what form of exercise is it
- How intense is the exercise
- Do they have any injuries or illnesses
- How many meals per day they eat
- What times of day they eat
- What time they get up and go to bed
- What barriers have they faced in the past when dieting
- What's worked in the past when dieting
- What stressors or barriers are they experiencing in their day-to-day lives
- Dietary restrictions and allergies
- What are their favourite foods
- What foods don't they like
- How committed are they to their goal
- …and more

In Kate's case, I made the following observations:

- Her weight gain was recent
- She is in perimenopause
- Her job has been particularly stressful since COVID-19
- She was barely eating during the day
- Her workouts were not intense
- She doesn't like to cook or spend much time in the kitchen
- Her husband is a police officer and also has a stressful job
- Her previous dieting attempts had been a failure because they were too restrictive and she couldn't stick to them

- She was not eating enough protein
- She is very committed to her goals and ready and willing to make changes

With this information, I calculated roughly how many calories per day Kate would need to consume in order to maintain her weight, and then I subtracted a small amount from that maintenance level to create a small caloric deficit. Since Kate was not eating nearly enough protein, I set her protein amount at 30% or her daily calories. I set her carbohydrates at 40% and fat at 30%. Since Kate is in perimenopause, I included foods that were high in calcium and Vitamin D. I also set meal timings that would work with her schedule and serve as a reminder to eat during the day, so she wasn't starving at night. Since Kate does not enjoy cooking, I included meals that could be prepared quickly and in bulk. This serves to reduce time in the kitchen but also to allow her to prepare several days worth of food at once. I included many of her favourite healthy foods within the plan and did not include items she doesn't enjoy. I also provided her with recommendations on healthy snacks, low calorie substitutions for her favourite treats, and tips for how to choose nutritious options when eating at a restaurant or on vacation. I also provided her with my recipe guide which included many different meals that would work with her plan. In terms of physical activity, I recommended that she consider adding in a brisk walk on her lunch break. This would serve to burn a few extra calories but also provide her a much-needed break and time to clear her thoughts during the day. Additionally, I promoted methods for assessing progress that don't revolve around the scale, as Kate would previously become discouraged if she hadn't dropped a specific amount of weight in a specific amount of time. Instead, we focused on the way she feels as a metric of success. Did her energy improve? Was she sleeping better? Had the bloating subsided? Did she have better focus? Did her mood improve? Was her blood pressure returning to a healthy level? Were her clothes fitting better? With these tools, Kate was able to easily follow the nutrition plan, acknowledge her areas of strength, pinpoint and address any areas of weakness, and celebrate successes that extend far beyond the scale. She did lose the weight, but now focuses her attention on how she feels rather than how much she weighs.

## Below is a sample meal plan:

**Breakfast 10am**

| Food Item | Qty | Size | Calories | Pro (g) | Carb (g) | Fat (g) |
|---|---|---|---|---|---|---|
| Fat fr. greek yogurt - low sugar or plain | 3/4 | cup | 130 | 14.0 | 17.0 | - |
| Berries (fresh or frozen - any kind) | 1/2 | cup | 42 | 2.0 | 11.0 | |
| Raw almonds | 24 | medium | 168 | 7.0 | 5.0 | 14.0 |
| | | | | | | |
| **OR** | | | | | | |
| Hard boiled eggs | 3 | large | | | | |
| Banana | 1 | medium | | | | |
| | | **Meal 1 Subtotals:** | 340 | 23.0 | 33.0 | 14.0 |

**Start morning with two cups of water.** If choosing option 1, top yogurt with berries and almonds. If using flavoured greek yogurt, try to find one with the lowest sugar possible. (Oikos makes some with 30% less sugar)

**Lunch 1pm**

| Food Item | Qty | Size | Calories | Pro (g) | Carb (g) | Fat (g) |
|---|---|---|---|---|---|---|
| Turkey Chili | 1.75 | cup | | | | |
| **OR** | | | | | | |
| Chicken breast or white fish of choice | 4 | oz | 150 | 33.0 | - | 2.0 |
| Sweet potatoes | 4 | ounces | 102 | 2.0 | 23.0 | - |
| Green vegetable of choice - steamed | 1 | cup | 39 | 3.0 | 8.0 | |
| Extra virgin olive oil | 1 | Tbsp | 120 | - | - | 14.0 |
| | | | | | | |
| | | **Meal 2 Subtotals:** | 371 | 38.0 | 31.0 | 16.0 |

**Drink 2 cups of water with this meal.**

**Snack 4pm**

| Food Item | Qty | Size | Calories | Pro (g) | Carb (g) | Fat (g) |
|---|---|---|---|---|---|---|
| Cottage Cheese 2% | 1 | cup | 220 | 30.0 | 12.0 | 5.0 |
| Apple or Banana | 1 | medium | 120 | 2.0 | 28.0 | - |
| **OR** | | | | | | |
| Pre-Workout Shake | 1 | serving | | | | |
| | | | | | | |
| | | | | | | |
| | | **Meal 3 Subtotals:** | 340 | 32.0 | 40.0 | 5.0 |

**Drink 2 cups of water.** Try to eat this meal at least 30-45 minutes before your workout. You can eat it a bit earlier than 4pm if you need to.

**Dinner 7pm**

| Food Item | Qty | Size | Calories | Pro (g) | Carb (g) | Fat (g) |
|---|---|---|---|---|---|---|
| Lean ground beef, roast beef, or salmon | 5 | oz | 304 | 38.0 | - | 15.0 |
| Basmati Rice or Quinoa - cooked | 1/2 | cup | 95 | 3.0 | 24.0 | - |
| Green vegetable of choice - steamed | 1 | cup | 39 | 3.0 | 8.0 | - |
| Extra virgin olive oil | 2 | tsp | 80 | - | - | 9.0 |
| | | | | | | |
| | | **Meal 4 Subtotals:** | 518 | 44.0 | 32.0 | 24.0 |

**Drink two cups of water with this meal.**

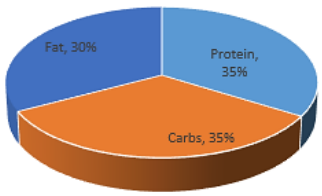
**Meal 5**

| Food Item | Qty | Size | Calories | Pro (g) | Carb (g) | Fat (g) |
|---|---|---|---|---|---|---|
| N/A | | | | | | |
| | | | | | | |
| | | **Meal 5 Subtotals:** | - | - | - | - |

**Meal 6**

| Food Item | Qty | Size | Calories | Pro (g) | Carb (g) | Fat (g) |
|---|---|---|---|---|---|---|
| N/A | | | | | | |
| | | | | | | |
| | | **Meal 6 Subtotals:** | - | - | - | - |
| | | **Daily Totals:** | 1,569 | 137.0 | 136.0 | 59.0 |

**Daily Macronutrients**




**Per Meal Averages - 4 Meals**

| | | |
|---|---|---|
| Calories | 392.25 | |
| Protein | 34.25 | grams |
| Carbs | 34.00 | grams |
| Fat | 14.75 | grams |

**Notes:**

- You can drink black coffee or tea freely.
- You can use stevia in your coffee and other recipes.
- Weigh your meat, fish, and potatoes **after** cooking.
- You can use mustard or low carb Bbq sauces freely.
- **Drink LOTS of water! Be sure to have some upon waking and with every meal.**
- Suggested green vegetables are broccoli, asparagus, Brussels sprouts, green beans, or even cauliflower. You can sub bell peppers here if you like.
- You can either cook with the olive oil or drizzle it on veggies.
- You can use spices freely.

**Below is a sample recipe:**

# SWEET POTATO CHILI (Instant Pot)

MAKES 5 SERVINGS

CALORIES: 377 | CARBS: 27 grams | FAT: 15 grams | PROTEIN: 33 grams | FIBRE: 6 grams

## INGREDIENTS

2 tsp olive oil

1 small yellow onion, chopped

3 garlic cloves, minced

1 medium sweet potato, cut into ½ inch pieces

1.5 lbs lean ground beef

2 tbsp chili powder (to taste)

1 tbsp ground cumin

1 tsp dried oregano

¼ tsp cayenne pepper

1 tsp salt, plus more to taste

1 (28 oz) can fire roasted diced tomatoes

1 can chickpeas, rinsed and drained

## NOTES

You can make large portions of this and freeze it. Be sure to let the chili cool completely before freezing.

## DIRECTIONS

1. Set Instant Pot to Sauté Mode. Once hot, add olive oil to coat bottom of the pot. Add onion and cook until softened. Add garlic and cook until fragrant, about 30 seconds.
2. Next, add in ground beef and break up the meat; cooking until no longer pink. Drain fat.
3. Add in chili powder, cumin, oregano, cayenne pepper, salt, chickpeas, sweet potatoes and tomatoes. Stir to combine.
4. Place the lid on the Instant Pot, set valve to Sealing, and set to pressure cook for 10 minutes.
5. Allow pressure to naturally release.
6. Taste and adjust seasonings and salt as necessary.

10

Now that we have covered some of the information I consider when working with a client and formulating an integrative plan, we will discuss the common factors/areas that a clinician should consider as part of an integrative nutrition approach to support whole-person wellness, as well as nutritionally based interventions to support those goals.

**Mental Health and Cognition**

Depression is generally thought of as biochemical imbalance or emotionally derived issue. While most people understand the connection between nutrition and physical health, few are aware of the intersection between nutrition and mental health. Indeed, nutrition can play a key role in the onset as well as severity and duration of depression (Rao et al, 2008). Nutritional neuroscience is an emerging discipline shedding light on the fact that nutritional factors are intertwined with human cognition, behavior, and emotions (Rao et al, 2008). Importantly, individuals struggling with a mental health problem have increased risk of developing somatic diseases including heart disease, diabetes, strike, hypertension, Alzheimer's, obesity, and cancer, therefore, the impact of nutrition extends well beyond changes to mood (Penninx et al, 2013).

Research has shown that the general population in the US is often deficient in many essential vitamins, minerals, and omega-3 fatty acids. Interestingly, the diets of individuals suffering from mental disorders show a substantial deficiency in these important nutrients (American Psychological Association, 2000). Nutrients have a positive impact on norepinephrine, dopamine, and serotonin, the brain's neurotransmitters. The nutrients the client consumes (or lack thereof) can impact that quality of neurotransmitters produced.

Omega 3, iron, folic acid, iron, and SAMe, and B vitamins, have been shown to improve symptoms of mild to moderate depression. Studies have shown that daily supplementation of these nutrients can be effective in reducing symptoms of depression and other mental health problems (Shaheen & Vieira, 2008).

Through an integrative approach, a clinician can assess a client's current diet and any self-described mental health concerns and formulate a nutrition plan that is designed to prevent or minimize symptoms of any noted concerns.

**Physical Health**

In recent years, interest in nutrition as a means of preventing and treating chronic illness, which has become a global epidemic and huge economic burden, has grown. Over the past few decades, individuals have seen a significant increase in weight gain due largely to changes in eating habits and decreased physical activity. These changes have led to increased incidences of cardiovascular diseases and Type II Diabetes (Ley et al, 2014). Dietary choices play a crucial role in public health, with an unhealthy diet ranked as the most prevalent cause of death in the United States (Wang et al, 2022). Poor nutrition can also lead to inflammation, migraines, and many other health problems.

Cardiovascular disease is the world's leading cause of death. It is estimated that nearly 18 million people died from heart disease in 2019, which represents a whopping 32% of all global deaths. This is an astonishing fact given that most cardiovascular diseases can be prevented by addressing risk factors such as nutrition and physical inactivity. Even a reduction in excess calories and improvement in food choices we make may prevent a substantial amount of primary and secondary cardiovascular events (Yu et al, 2018).

Like cardiovascular diseases, Type II diabetes is a major public health crisis. Type II diabetes is a flaw in the way the body controls and uses sugar (glucose) as a fuel. Long-term, this results in too much sugar circulating in the bloodstream, which can lead to other serious health problems such as cardiovascular disease and kidney disease (CDC, 2022).

In order to improve outcomes for individuals with either disorder and to lower risk for developing these disorders, diets that are rich in high quality whole grains, fruits &

vegetables, legumes, nuts and seeds, are recommended. This type of diet also improves glycemic regulation and blood lipids in patients who already have diabetes (Ley et al, 2014). These healthy diets were moderate in the consumption of alcohol, and low in refined grains, processed meats, red meat, and sugar sweetened drinks. Limiting excess caloric intake from any source is also recommended.

Migraines are another common physical ailment that can stem from poor nutrition. Common culprits include foods or drinks containing preservatives, artificial sweeteners, refined sugars, and caffeine. Low blood sugar or a sudden increase in blood sugar can also lead to migraines. Consuming a diet of whole foods can help reduce symptoms of migraines headaches (Naidoo, 2020).

Many foods can cause inflammation that leads to conditions such as arthritis pain, inflammatory bowel disease, eczema, and atherosclerosis. Inflammation causing foods include items that contain refined sugar, saturated fat, trans fat, preservatives/additives, sodium, and some animal proteins. As with the previously mentioned healthful diets, consuming whole grains, fruits & vegetables, minimally processed, low-in-saturated foods can assist with inflammation. Some vitamins and minerals that have been shown to be effective in reducing inflammation include turmeric, Boswellia, licorice, and aloe vera (Source).

With chronic illness on the rise and given the power of proper nutrition to prevent and/or alleviate many forms of it, it is clear that we must take an integrated approach to tackling these health-related concerns.

**Physical Activity**

Most people understand that proper nutrition is good for their health. Likewise, they understand that physical activity is good for their health. That said, the health benefits of nutrition and physical activity are often expressed independently of one another, but it is becoming more and more clear that the integration of the two has the potential to produce even greater benefits than engaging or focusing on one or the other. We know

that poor nutrition is most prevalent cause of death in the US (Wang et al, 2022), however, we cannot overlook the importance of exercise in achieving and maintaining good health. Part of the issue with the integration of physical activity and nutrition, in my experience, is that practitioners typically specialize in only exercise or only nutrition and therefore do not know how to or perhaps do not feel comfortable combining approaches. This leaves a slew of potential benefits on the table.

Studies have shown that individuals who are older and/or less fit can substantially reduce their risk for chronic illness and improve their cardiorespiratory fitness by engaging in moderate levels of physical activity (Thompson et al, 2014). Likewise, eating healthily helps prevent, delay, and manage heart disease, type II diabetes, and other chronic diseases. A balanced, nutritious diet includes a variety of fruits, vegetables, whole grains, lean protein, and low-fat dairy products and limits added sugars, saturated fats, and sodium (CDC, 2022). Specifically, the DASH diet and Mediterranean diet have been shown to be particularly effective. A study by Draganidis et al. who compared elderly people with low vs. high levels of systemic inflammation and found physical activity, particularly moderate to vigorous activity, as well as increased antioxidant intake, was associated with low levels of systemic inflammation. (Koehler and Drenowatz, 2019).

While the impact of exercise on overall health and wellbeing is clear, the impact of exercise on weight loss for overweight and obese individuals remains in question. We know that exercise increases energy expenditure and thereby has the potential to induce weight loss, however, weight loss does not always occur with exercise alone. Why? It has been suggested that the effectiveness of physical activity as a means of losing weight is very much dependent on its effects on dietary intake. One of the main barriers that has been identified as means of achieving weight loss from physical activity alone is *compensatory eating*, which is defined as an increase in food intake following exercise or physical activity (Stein et al, 2016). A study by Gustafson et al (2018) has shown that those who exercise will often alter their food choices to select unhealthier items after they workout. Within his experiment, gym-goers were given the choice

between a healthy and an unhealthy snack to eat after their workout. Compared to when this choice was made prior to exercise, individuals after completing exercise were less likely to choose a healthy snack and instead chose the unhealthy option.

In my experience, individuals will often “eat back” the calories they believe they’ve burned during an exercise session. Unfortunately, the devices they are using to track their energy expenditure such as their fitness watches or the estimate provided on their treadmill or elliptical are often inaccurate and overestimate the number of calories burned by over 70% (source). This leads to individuals eating far more calories than they actually burned. In both scenarios, integrating fitness and proper nutrition would be a far better strategy for weight loss than engaging in only one or the other.

Though goals may vary for each individual, from those simply wanting to improve health to those interested in achieving high levels of physical fitness, the benefits of maintaining a fitness regime are well documented. They include reduced risk for cardiovascular disease, reduced risk for obesity and type 2 diabetes, reduced risk for osteoporosis and potentially a reduced risk of colon cancer (Thompson et al, 2014). Given that our population is becoming less physically activity and gaining weight (Ley et al, 2014), it is clear that we must encourage physical activity in combination with proper nutrition.

**Nutrition Education**

As part of an integrative nutrition approach, a practitioner should provide education to their clients. This empowers the client to make sound food choices in the absence of the practitioner or after the relationship has come to an end. Simply providing a nutrition plan, which is common practice, does not teach the client about nutrition, how it affects their mind and bodies, how to read nutrition labels, and how to incorporate various important nutrients into their diets. Education to the client may include topics such as diet trends, macronutrients, micronutrients, food labelling, food marketing, and food as fuel.

When a client first comes to me, they typically express their frustration with their lack of success at dieting and weight loss. They have usually tried many different diets and products such as low-carb, Keto, Paleo, gluten-free, carnivore diet, fat loss pills, and meal replacement shakes, etc. Clients are overwhelmed with the sheer volume of information that can be found online about various diets, particularly since they often contain conflicting information. It becomes my job to explain these diets and products and why they may or may not work, and then make suggestions on how to create a nutrition plan that works for their individual needs.

Most of my new clients have heard the terms macro- and micronutrients, and they may even know what the macronutrients are, but they lack understanding of their effects on the body and the implication of becoming deficient in any of them. As part of the meal planning process, I explain the function and importance of each as well as how to create a proper balance based on their individual needs and level of physical activity.

In my experience, people tend to vastly underestimate the number of calories they're consuming a day, and this is partially due to lack of understanding of food labelling. Often, individuals will look at the calories indicated on the food level, but will not notice the portion size. They may also view something low calorie as healthful (sugar free pudding and Jello, for example), despite the fact that these products offer no nutritional benefit. It's important to educate individuals on how to read a food label, what the items indicated on the food label mean, and what ingredients to watch out for.

Finally, a conversation about food marketing is an important tool a practitioner can use to help clients make better food choices. Providing the recommendation to shop the perimeter of the grocery store first, for example, is a good strategy. Within the aisles, identifying the fact that stores but the expensive/flashy items at adult eye level, and the products that are marketed towards children (sugary cereals, candy, etc), at a lower level, can be empowering information for a client to consider when food shopping.

Integrating and educational component into nutrition planning is far more effective, in my experience, than simply providing an individual with a nutrition plan and asking them to follow it. Knowledge is power; and when clients feel empowered, they make better choices.

**Conclusion:**

Despite advances in research which have demonstrated the interconnectedness between mental, physical, and emotional health, common practice is to address health-related issues from various perspectives (psychological, physical, nutritional, etc.) separately. With the current state of public health, it's imperative to integrate approaches in order to address issues simultaneously and ideally preventatively.

As nutrition clinicians, we can take an integrative approach by considering the many different bio-psycho-social factors that impact a person's health and behaviours. A traditional approach taken by a nutrition professional may be to create a plan and perhaps cover the fundamentals of macronutrients, micronutrients, and energy expenditure; however, the idea of integrative nutrition is to go deeper and explore potential barriers or areas of need in other aspects of life that could interfere with health and wellness. The nutritionist can then take the appropriate steps to create a nutrition plan that helps heal the body physically, mentally, and emotionally.

Over the past few decades, individuals have seen a significant increase in weight gain due largely to changes in eating habits and decreased physical activity. These changes have led to increased incidences of cardiovascular diseases and Type II Diabetes (Ley et al, 2014). There have been many studies on the specific dietary and lifestyle determinants of chronic illnesses and the general consensus has been that reducing dietary and lifestyle risk factors could prevent most incidences of cardiovascular disease, diabetes, and many cancers among high-income populations (Willett, 2002). The importance of these results cannot be overstated as they show us that these chronic illnesses are not simply unavoidable consequences of existing in a modern

society, which means we have the choice and the power to change our habits to reduce the risk of these diseases. To do so, however, we must incorporate interventions proactively and simultaneously.

**References:**

American Psychiatric Association. “Diagnostic and statistical manual of mental disorders”. 4th ed. (2000). Washington DC.

Anton, B. “Why integrated care is essential for health”. *American Psychological Association*. (2015): 46 (5). Available at https://www.apa.org/monitor/2015/05/pc

Centers for Integrative Medicine. “Integrative Nutrition”. Centers for Integrated Health: UC San Diego. (2022). Available at: https://cih.ucsd.edu/medicine/integrative-nutrition-overview

Gustafson, Christopher R et al. “Exercise and the Timing of Snack Choice: Healthy Snack Choice is Reduced in the Post-Exercise State.” *Nutrients* vol. 10,12 1941. 7 Dec. 2018, doi:10.3390/nu10121941

Katon et al. “Collaborative Care for Patients with Depression and Chronic Illnesses”. *New England Journal of Medicine*. (2010); 363:2611-20. Available at https://www.nejm.org/doi/pdf/10.1056/NEJMoa1003955

Koehler, Karsten, and Clemens Drenowatz. “Integrated Role of Nutrition and Physical Activity for Lifelong Health.” *Nutrients* vol. 11,7 1437. 26 Jun. 2019, doi:10.3390/nu11071437

Ley, Sylvia H et al. “Prevention and management of type 2 diabetes: dietary components and nutritional strategies.” *Lancet (London, England)* vol. 383,9933 (2014): 1999-2007. doi:10.1016/S0140-6736(14)60613-9

Naidoo, U. “This Is Your Brain on Food”. *Little Brown*, (2020): ISBN 0316536806

Penninx, B.W., Milaneschi, Y., Lamers, F. et al. “Understanding the somatic consequences of depression: biological mechanisms and the role of depression symptom profile”. *BMC Med 11*, 129 (2013). https://doi.org/10.1186/1741-7015-11-129

Rao, T S Sathyanarayana et al. “Understanding nutrition, depression and mental illnesses.” *Indian journal of psychiatry* vol. 50,2 (2008): 77-82. doi:10.4103/0019-5545.42391

Shaheen Lakhan SE, Vieira KF. Nutritional therapies for mental disorders. *Nutr Jr.* (2008);7:2.

Stein, Aliza T et al. “Eating in response to exercise cues: Role of self-control fatigue, exercise habits, and eating restraint.” *Appetite* vol. 96 (2016): 56-61. doi:10.1016/j.appet.2015.09.007

Willett W. C. “Balancing Lifestyle and Genomics Research for Disease Prevention”. *Science*. (2002); 296:695–98.