

Nutritional Analysis

Introduction

The client is 45 years old and is currently working in an office job which is a predominantly sedentary role, requiring extended periods of seated activity. This has contributed to low levels of physical activity and is considered a key factor influencing the client's current health status.

After a consultation with my client, it indicates that the client's body mass is above the recommended range for their height (Zierle-Ghosh,2025). While no medical conditions have been formally diagnosed, the client reports several health-related concerns, including reduced energy levels, elevated stress, and intermittent lower back discomfort. These concerns may be associated with prolonged sedentary behaviour and limited engagement in regular physical activity. At present, there are no identified barriers to exercise; however, a progressive and individualised approach is required to ensure safety and promote long-term adherence.

The client's main goal is to improve body composition and overall physical fitness. In addition, the client aims to increase daily energy levels and develop sustainable exercise behaviours that can be maintained alongside occupational commitments. Secondary goals include improved stress management, enhanced muscular strength, and increased confidence in engaging in physical activity.

The client has expressed a preference for achievable, long-term dietary improvements rather than restrictive or short-term approaches. Consequently, the nutritional intervention will focus on gradual, sustainable changes informed by analysis of the client's food diary. This analysis will be used to identify current dietary patterns, nutritional imbalances, and areas for improvement in relation to energy intake, macronutrient distribution, and overall diet quality. The findings from the food diary will inform evidence-based nutritional recommendations aimed at supporting improved health outcomes, energy levels, and long-term adherence to healthier eating behaviours.

Client summary	
Height	170cm
Weight	83kg
Health concerns	Low back discomfort, stress, low energy
Current activity level	low
Medical conditions	none

5-day food diary

The five-day food diary was analysed using Nutritics (Nutritics, 2019), is a nutrition analysis software commonly used in academic and professional settings. Nutritics (Nutritics, 2019) uses UK food

composition data to calculate energy intake and provide a breakdown of macronutrients and micronutrients. All foods and drinks recorded in the diary were entered into the software, with portion sizes estimated using standard household measures to represent typical consumption.

Nutritics (Nutritics, 2019) calculates an average daily nutrient intake across the recording period and compares this with UK Dietary Reference Values (DRVs) (Powers,2021). This makes it easier to identify areas where intake may be too high or too low. The software is particularly useful for gaining an overall picture of usual dietary habits and supporting personalised dietary advice. However, the accuracy of the analysis depends on how accurately foods and portion sizes are recorded, which is a known limitation of self-reported food diaries.

Nutrient	Avg intake	target
Energy (kcal)	2033kcal	1909kcal
Energy (Kj)	8522kj	7981kj
Carbohydrates	226g	227g
Protein	69g	56g
Fat	91	86g
Saturated fats	31.8g	<23.3g
Fibre	16.4g	30g

This nutritional analysis indicates that the client's average daily energy intake is slightly higher than the recommended target. Mean energy consumption was approximately 2033 kcal (8522 kJ), compared with a target of 1909 kcal (7981 kJ). While this difference is relatively small, consistently consuming energy above requirements may contribute to gradual weight gain over time if not balanced with adequate physical activity. Carbohydrate intake was broadly in line with recommendations (Cao, 2025), with an average intake of 226 g compared to a target of 227 g. This suggests that overall carbohydrate consumption is appropriate. However, the quality of carbohydrate sources is likely poor, given the low fibre intake observed.

Protein intake averaged 69 g per day, exceeding the target intake of 56 g. This level of protein intake may be beneficial for supporting muscle maintenance (Kokura, 2024). Total fat intake was also slightly above the recommended level (WHO,2023), with an average intake of 91 g compared to a target of 86 g. The biggest concern would be the saturated fat intake, which averaged 31.8 g per day and exceeded the recommended upper limit of 23.3 g. High saturated fat intake is associated with increased cardiovascular disease risk and is likely influenced by regular consumption of processed foods, takeaways, and full-fat animal products within the diet (Malczyk, 2025).

Fibre intake was notably low, with an average intake of 16.4 g per day, well below the recommended target of 30 g. This indicates a lack of wholegrains, fruit, vegetables, and legumes in the client's diet. Low fibre intake may negatively impact digestive health, blood glucose regulation, and long-term

disease risk (Alahmari,2024). Overall, the analysis highlights that while energy and carbohydrate intake are broadly appropriate, key areas for improvement include reducing saturated fat intake and significantly increasing fibre intake. Addressing these areas would improve overall diet quality and support better long-term health outcomes.

Comparison of average intake with female dietary reference values (DRV)

The client’s average dietary intake, analysed using Nutritics (Nutritics, 2019), was compared with UK Dietary Reference Values (DRVs) (Powers, 2021) for adult females to assess nutritional similarity. Energy requirements were individualised based on the client’s height, weight, age range, and low physical activity level, while standard female DRVs (Powers, 2021) were applied for all other nutrients. This approach allows for a more accurate evaluation of dietary intake in relation to individual needs.

Table: Comparison of average intake with female DRVs

Nutrient	Average Intake	Female DRV / Target	Assessment
Energy	2033 kcal	1909 kcal (individualised)	Slightly above requirement
Protein	69 g	45 g	Above DRV
Carbohydrate	226 g	~50% total energy	Appropriate
Total Fat	91 g	≤35% total energy	Slightly high
Saturated Fat	31.8 g	≤23.3 g	High
Fibre	16.4 g	30 g	Low
Iron	~10 mg	14.8 mg	Below DRV
Calcium	~720 mg	700 mg	Meets DRV

The client’s average energy intake was 2033 kcal per day, which exceeds the individualised estimated requirement of 1909 kcal. Although this excess is relatively small, prolonged consumption above energy needs may contribute to gradual weight gain (Hill,2013), particularly given the client’s sedentary occupation (Panahi,2018). Improving energy balance through dietary modification and increased physical activity would be beneficial.

Protein intake averaged 69 g per day, exceeding the female DRV (Powers, 2021) of 45 g. This level of intake is considered adequate and potentially beneficial, as protein supports muscle maintenance and metabolic health (Janine, 2020). For this client, whose goals include improving body composition and physical fitness, protein intake is not a concern and does not require reduction.

Iron intake was below the female DRV (Powers, 2021) of 14.8 mg per day, with an estimated intake of approximately 10 mg. This is a key nutrient of concern, particularly for pre-menopausal women, due to increased iron requirements associated with menstrual blood loss (Jiane, 2009). Low iron intake may contribute to symptoms such as fatigue and low energy, which have been reported by the client. Increasing consumption of iron-rich foods, such as lean red meat, fortified cereals, legumes, and green leafy vegetables, alongside vitamin C-rich foods to enhance absorption, should be prioritised.

Calcium intake was approximately 720 mg per day, meeting the female DRV (Powers, 2021) of 700 mg. This suggests that current intake is sufficient to support bone health (Mangano, 2014). Maintaining adequate calcium intake is particularly important for women to reduce the long-term risk of osteoporosis.

Other nutrients of concern include fibre and saturated fat. Fibre intake was significantly below the recommended 30 g per day, indicating insufficient intake of wholegrains, fruit, vegetables, and legumes. Low fibre intake may negatively affect digestive health and increase long-term cardiometabolic risk (Evans, 2020). Saturated fat intake exceeded recommendations, which may increase cardiovascular disease risk (Siri-Tarino, 2010). Overall, while protein and calcium intakes are adequate, improving iron and fibre intake and reducing saturated fat consumption should be key priorities to improve diet quality and long-term health outcomes.

The role of nutritional analysis

Nutritional analysis plays a central role in understanding dietary intake and informing evidence-based dietary interventions for individuals. By systematically assessing food and nutrient consumption, nutritional analysis enables practitioners to identify deficiencies, excesses, and imbalances that may impact health, performance, or disease risk. However, while nutritional analysis is a valuable tool, its effectiveness depends on the method used, the context in which it is applied, and the accuracy of the data collected. (Kesari, 2023)

Several methods of nutritional analysis are commonly used in both clinical and non-clinical settings. One widely used approach is the food diary, typically recorded over three to seven days. This method provides detailed information on habitual dietary intake and allows for analysis of energy,

macronutrients, and selected micronutrients. Food diaries are particularly useful for individuals seeking to improve diet quality or body composition, as they encourage self-awareness and reflection. However, food diaries rely heavily on self-reporting and are prone to under-reporting, inaccurate portion estimation, and changes in eating behaviour due to the act of recording intake. (Ravelli, 2020)

Another method is the 24-hour dietary recall, in which individuals retrospectively report all foods and beverages consumed in the previous day. This approach is relatively quick and reduces participant burden, making it suitable for large populations or time-limited assessments. Nevertheless, it may not accurately represent habitual intake, particularly if a single recall is used, and is influenced by memory and interviewer skill (Osadichy,2020). The food frequency questionnaire (FFQ) (Perez,2015) assesses usual intake over an extended period, such as weeks or months, by examining how often specific foods are consumed. FFQs are useful for identifying long-term dietary patterns and are frequently used in epidemiological research. However, they provide less precise nutrient data and may overlook portion size variability, limiting their applicability for individualised dietary planning.

Technological advancements have introduced dietary analysis software and mobile applications, which can enhance efficiency and accuracy by automating nutrient calculations. While these tools improve accessibility, their reliability depends on the quality of food composition databases and user input.

In conclusion, nutritional analysis is an essential component of individual dietary assessment, supporting personalised recommendations and behaviour change. However, practitioners must critically select appropriate methods, acknowledge inherent limitations, and interpret findings within the broader context of lifestyle, health status, and individual goals to ensure meaningful and ethical application.

Report for client

This report summarises the findings from the analysis of your completed food diary and provides an overview of your current dietary intake in relation to health and wellbeing. The food diary was recorded over several days and analysed to assess overall energy intake, macronutrient balance, and general diet quality.

Overall, the analysis suggests that your energy intake is broadly aligned with your estimated daily requirements; however, the distribution of nutrients could be improved. Carbohydrate intake was lower than recommended, particularly from wholegrain and fibre-rich sources. This may contribute to reduced energy levels throughout the day. In contrast, fat intake was relatively high, with a greater proportion coming from saturated fat sources such as processed foods and snacks. Reducing saturated

fat intake and replacing these foods with healthier unsaturated fat sources may support long-term cardiovascular health.

Protein intake was found to be good and generally well distributed across meals, which is beneficial for maintaining muscle mass and supporting satiety. However, fruit and vegetable consumption was below the recommended five portions per day. This may result in insufficient intake of key vitamins, minerals, and dietary fibre, all of which are important for digestive health, immune function, and disease prevention.

In addition, the analysis highlighted irregular meal timing and occasional meal skipping, which may negatively affect energy levels and concentration. Fluid intake was also slightly below recommended levels, suggesting that increasing water consumption may be beneficial.

Based on this analysis, key areas for improvement include increasing fruit, vegetable, and wholegrain intake; reducing foods high in saturated fat; and establishing more consistent meal patterns. These changes, implemented gradually, may help improve energy levels, overall diet quality, and long-term health outcomes. The findings from this analysis will be used to inform personalised and sustainable dietary recommendations moving forward.

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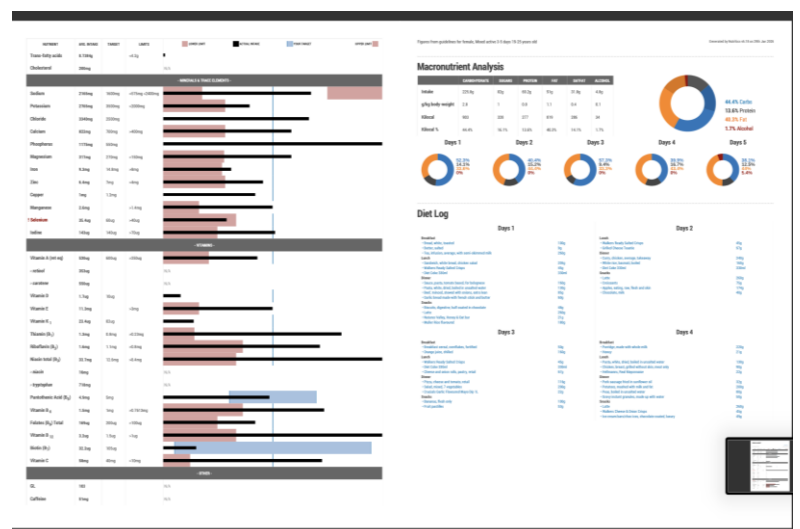
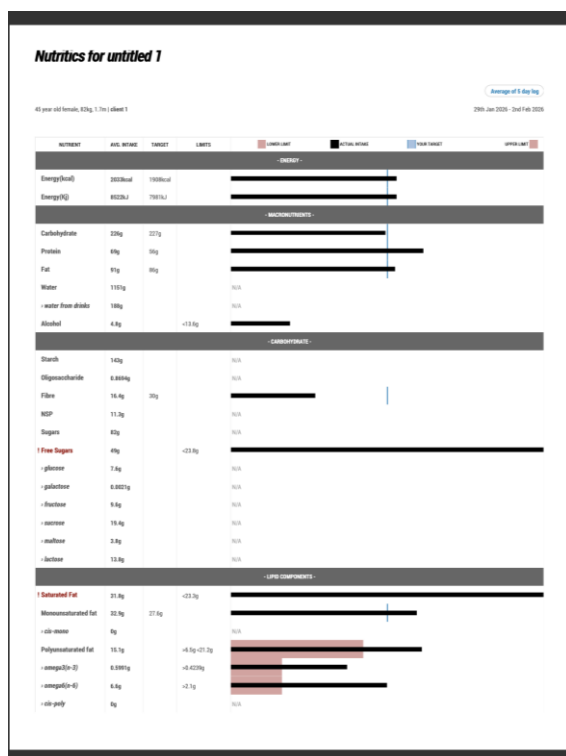
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Diet Log

Breakfast

- Bread, white, toasted
- Butter, salted
- Tea, infusion, average, with semi-skimmed milk

Lunch

- Sandwich, white bread, chicken salad
- Walkers Ready Salted Crisps
- Diet Coke 330ml

Dinner

- Sauce, pasta, tomato based, for bolognese
- Pasta, white, dried, boiled in unsalted water
- Beef, minced, stewed with onions, extra lean
- Garlic bread made with french stick and butter

Snacks

- Biscuits, digestive, half coated in chocolate
- Latte
- Natures Valley, Honey & Oat bar
- Muller Rice flavoured

Days 1

100g

9g

260g

205g

45g

330ml

160g

130g

85g

60g

48g

260g

21g

180g

Days 3

Breakfast

- Breakfast cereal, cornflakes, fortified
- Orange juice, chilled

Lunch

- Walkers Ready Salted Crisps
- Diet Coke 330ml
- Cheese and onion rolls, pastry, retail

50g

160g

45g

330ml

67g

Days 2

Lunch

- Walkers Ready Salted Crisps
- Grilled Cheese Toastie

Dinner

- Curry, chicken, average, takeaway
- White rice, basmati, boiled
- Diet Coke 330ml

Snacks

- Latte
- Croissants
- Apples, eating, raw, flesh and skin
- Chocolate, milk

45g

97g

240g

160g

330ml

260g

75g

174g

40g

Days 4

Breakfast

- Porridge, made with whole milk
- Honey

Lunch

- Pasta, white, dried, boiled in unsalted water
- Chicken, breast, grilled without skin, meat only
- Hellmann's Real Mayonnaise

220g

21g

130g

90g

22g