



Nutrition, Mental Health & Education
in Care-Experienced Individuals

WELCOME



DATE

21/05/2025



TIME

1230



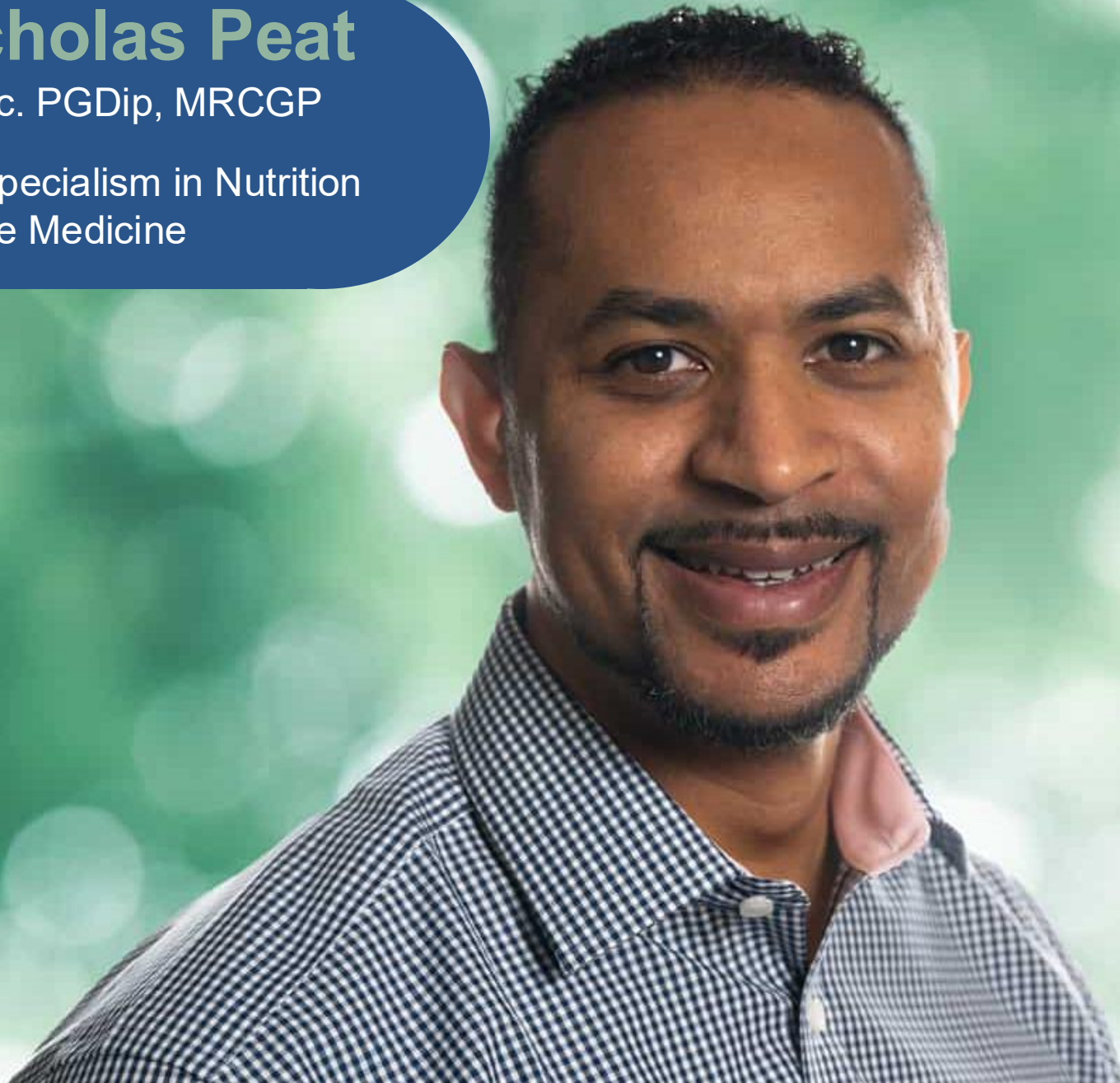
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Co-founders - Uniquely Created U

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GP with a specialism in Nutrition
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Our Aims

Prevalence of mental health in children and adolescents

Link between nutrition and mental health

Mealtime challenges in care-experienced compared to non-care-experienced children

Expectations of higher-education institutes and care providers

Practical dietary strategies to support mental resilience and emotional wellbeing.

The prevalence of mental health in children and adolescents



Mental health

Children and Adolescents

Pinkney S and Walker G (2020) Children and Youth Services Review, Volume 108

Care-experienced students are disproportionately affected by mental health problems

Conditions:

Anxiety

Depression

Stress

Causes:

Early trauma

Instability in care placements

Unresolved emotional struggles



Mental health

Children and Adolescents

NICE (2021) Looked-After Children and Young People

Care-experienced students are disproportionately affected by mental health problems

Rates of emotional and mental health problems 5 to 15 year olds

Care Experienced (CE) 45%

Non-care Experienced (NCE) 10%



Mental health

Children and Adolescents

Smith, N (2017) Neglected Minds, Barnardo's

Care-experienced students are disproportionately affected by mental health problems

Residential care and mental health

72% of those in residential care exhibit mental health conditions, the highest among placement types

Compared to 10% in the general population



The link between nutrition and mental health



Nutrition and mental health

Children and Adolescents

Multiple studies show a strong association between healthy dietary habits and better mental health in children and adolescents.

Nutrition and mental health

Children and Adolescents

Hayhoe R et al., (2021) BMJ Nutrition, Prevention & Health

Research on school children

Secondary pupils

Higher fruit and vegetable consumption was significantly associated with better mental wellbeing.

Primary and secondary pupils

The type of breakfast and lunch consumed was significantly associated with wellbeing.

Nutrition and mental health

Children and Adolescents

Hayhoe R et al., (2021) BMJ Nutrition, Prevention & Health

Lower scores suggested the child was struggling more with their mental and emotional health.

Higher scores suggested greater happiness and optimism.

A difference of **3 points** was considered meaningful.

Higher fruit and vegetable consumption, better mental health

Hayhoe R et al., (2021) *BMJ Nutrition, Prevention & Health*



5 or more a day

Secondary school children who ate five or more portions of fruits and vegetables (F&V) had wellbeing scores about 3.73 points higher than those who ate none.



Comparable magnitude to arguing and violence

The difference in mental wellbeing between children who consumed the most F&V compared with the lowest was of a similar scale to those children experiencing daily, or almost daily, arguing or violence at home (2.95 units lower).

The type of breakfast and lunch matters

Hayhoe R et al., (2021) BMJ Nutrition, Prevention & Health

Factors that lower mental wellbeing

Skipping breakfast

Students who skipped breakfast had wellbeing scores 2.73 units lower than those who ate a conventional breakfast

Energy drinks for breakfast

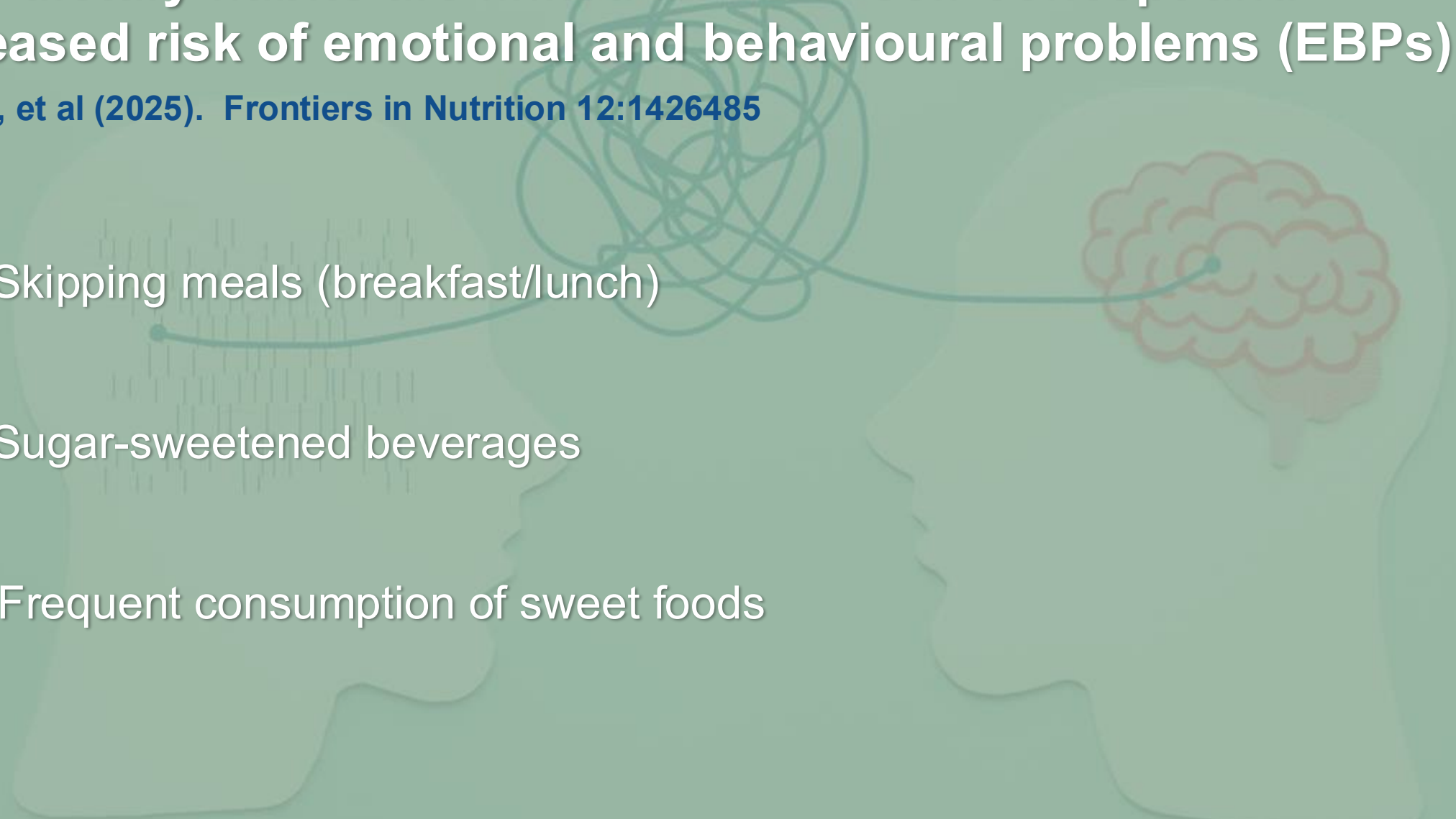
Those consuming only an energy drink for breakfast had scores 3.14 units lower

Skipping lunch

Skipping lunch was associated with a 2.95 unit lower well-being score

Poor dietary habits are linked to lower self-concept and increased risk of emotional and behavioural problems (EBPs)

Zhao D, et al (2025). *Frontiers in Nutrition* 12:1426485



Skipping meals (breakfast/lunch)

Sugar-sweetened beverages

Frequent consumption of sweet foods

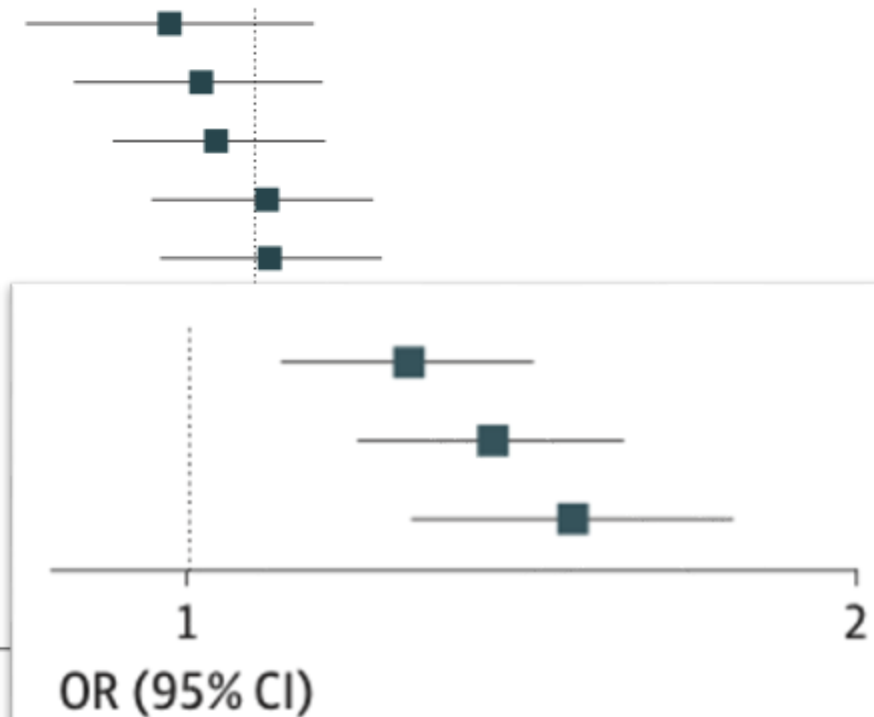
Nutrition and mental health

Artificial sugars and Ultra processed foods

Samuthpongton C, et al. (2023) JAMA Netw Open

Figure. Ultraprocessed Foods (UPF) Components and Risk of Incident Depression

UPF components	OR (95% CI)
Sugar-sweetened beverages	0.89 (0.73-1.08)
Dairy-based desserts	0.93 (0.78-1.10)
Condiments	0.95 (0.82-1.10)
Meat products	1.02 (0.87-1.18)
Breakfast items	1.02 (0.88-1.19)
Other artificial sweeteners	1.26 (1.10-1.43)
Artificially sweetened beverages	1.37 (1.19-1.57)
UPF	1.49 (1.26-1.76)



Nutrition and mental health

University Students

The time spent at university is a pivotal period for developing eating habits that can impact long-term health.

Nutrition and mental health

University Students

Solomou, S et al. (2023) Health Education Research 38, 28–68

Several longitudinal studies link stress (including academic stress) to unhealthy diets over time.

Stress is associated with increased intake of high-sugar and energy-dense foods.

Consistent with adult research on stress and eating patterns

Nutrition and mental health

University Students

Solomou, S et al. (2023) Health Education Research 38, 28–68

Factors Affecting Mental Health in University Students

- Stressful life events
- Body image concerns
- Physical activity levels
- Sleep quality
- Social support
- Use of alcohol or illicit drugs

Nutrition and mental health

University Students

Solomou, S et al. (2023) Health Education Research 38, 28–68

Diet-Related Factors Impacting Mental Health

- Availability and access to pre-prepared meals/fast foods on campus
- Limited financial resources for food shopping
- Lack of ease in accessing healthy food options
- Lack of companionship during mealtimes

Nutrition and mental health

University Students

Almoraie N et al., (2024) Nutrition Research Reviews

Common Eating Behaviours

- High intake of UPF and free sugars
Fast food, processed snacks, sugary drinks
- Low consumption of fruits and vegetables
Miss important nutrients
- Frequent meal skipping (especially breakfast)
Under fuelling
- Reliance on convenience foods
Likely ultra-processed and expensive

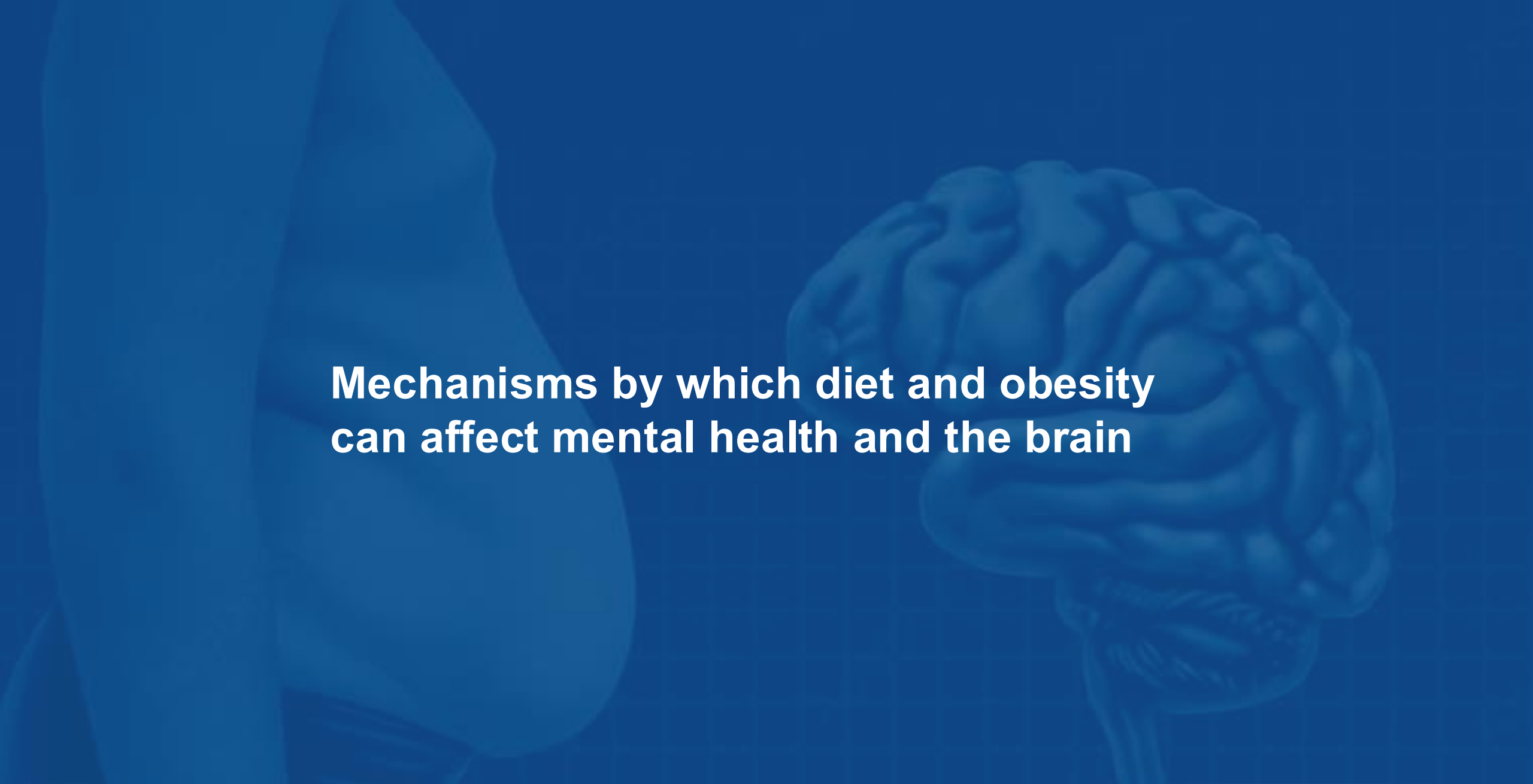
Nutrition and mental health

University Students

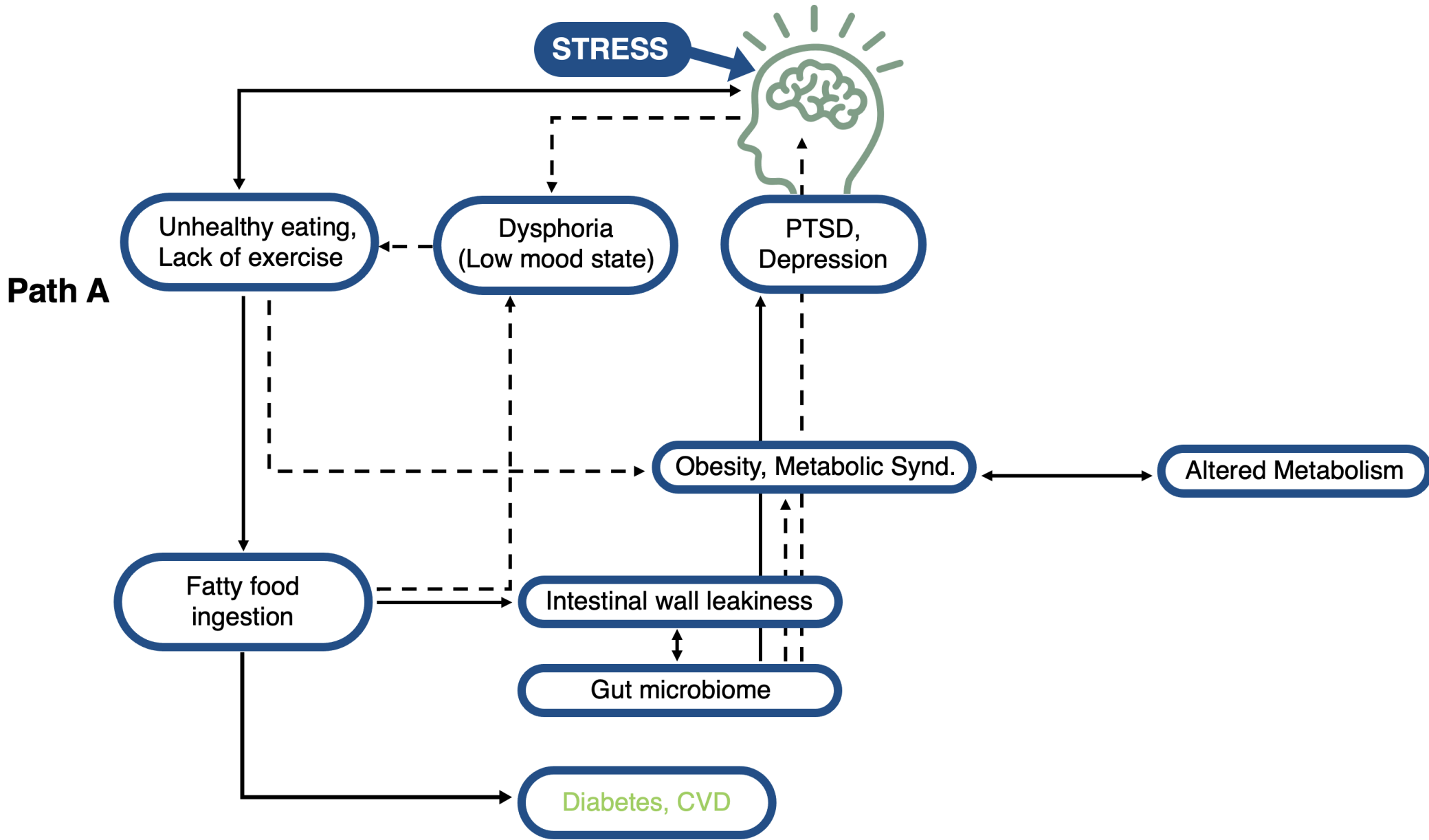
Almoraie N et al., (2024) Nutrition Research Reviews

These dietary patterns are associated with:

- Fatigue
- Poor concentration
- Weakened immunity
- Lower academic performance



Mechanisms by which diet and obesity can affect mental health and the brain



Mechanisms by which diet and obesity can affect mental health and the brain

Bremner JD et al. (2020) Nutrients

Nutrition and mental health

University Students

National Diet and Nutrition Survey, Rolling programme Years 9 to 11 (2016/2017 to 2018/2019)

Main Findings for Young People (Aged 11–18 Years)

Excess	Impact
Free sugars	Weight gain, poor dental health, metabolic syndrome, chronic disease
Saturated fat	Weight gain, metabolic syndrome, colon and rectal cancer, arteriosclerosis

Nutrition and mental health

University Students

National Diet and Nutrition Survey, Rolling programme Years 9 to 11 (2016/2017 to 2018/2019)

Main Findings for Young People (Aged 11–18 Years)

Deficiency	Impact
Fibre	Constipation, haemorrhoids, diverticular disease, bowel cancer, etc
Folate	Anaemia, gut and neurological problems, pregnancy – neural tube defects
Iron	Cognitive function, immune function and a risk of anaemia
Vitamin D	Calcium metabolism, immunity, malaise
Omega-3 (fish oil)	Cognitive development and function, heart health, and reduced inflammation



Mealtime challenges

Care-experienced (CE) compared to non-care-experienced (NCE) children



Mealtime challenges

CE compared to NCE children

Snuggs et al. (2025) *Appetite*, Volume 208

Highlights higher levels of:

- Overeating
- Selective eating (aka picky/fussy eating)
- Disordered eating (e.g. eating from the bin, stealing and gorging food)
- Food disgust
- Pica (eating non-food items)
- Food-related self-injury (i.e. intentionally consuming harmful substances)

May continue into adulthood if unmanaged



Mealtime challenges

CE compared to NCE children

Snuggs et al. (2025) *Appetite*, Volume 208

CE children: 6x higher adverse childhood events than NCE children

Adverse childhood events (ACEs) are associated with higher levels of food insecurity

As traumatic ACEs increase the level of problematic eating behaviours increases



Why might CE children develop certain food preferences?

Snuggs et al. (2025) *Appetite*, Volume 208

CE children have likely experienced trauma

They face specific food-related challenges, including:

- Unpredictable access to food
- Food insecurity
- Unhealthy diets

These experiences can shape their food preferences differently from others



Why might CE children develop certain food preferences?

Snuggs et al. (2025) *Appetite*, Volume 208

Interoceptive difficulties

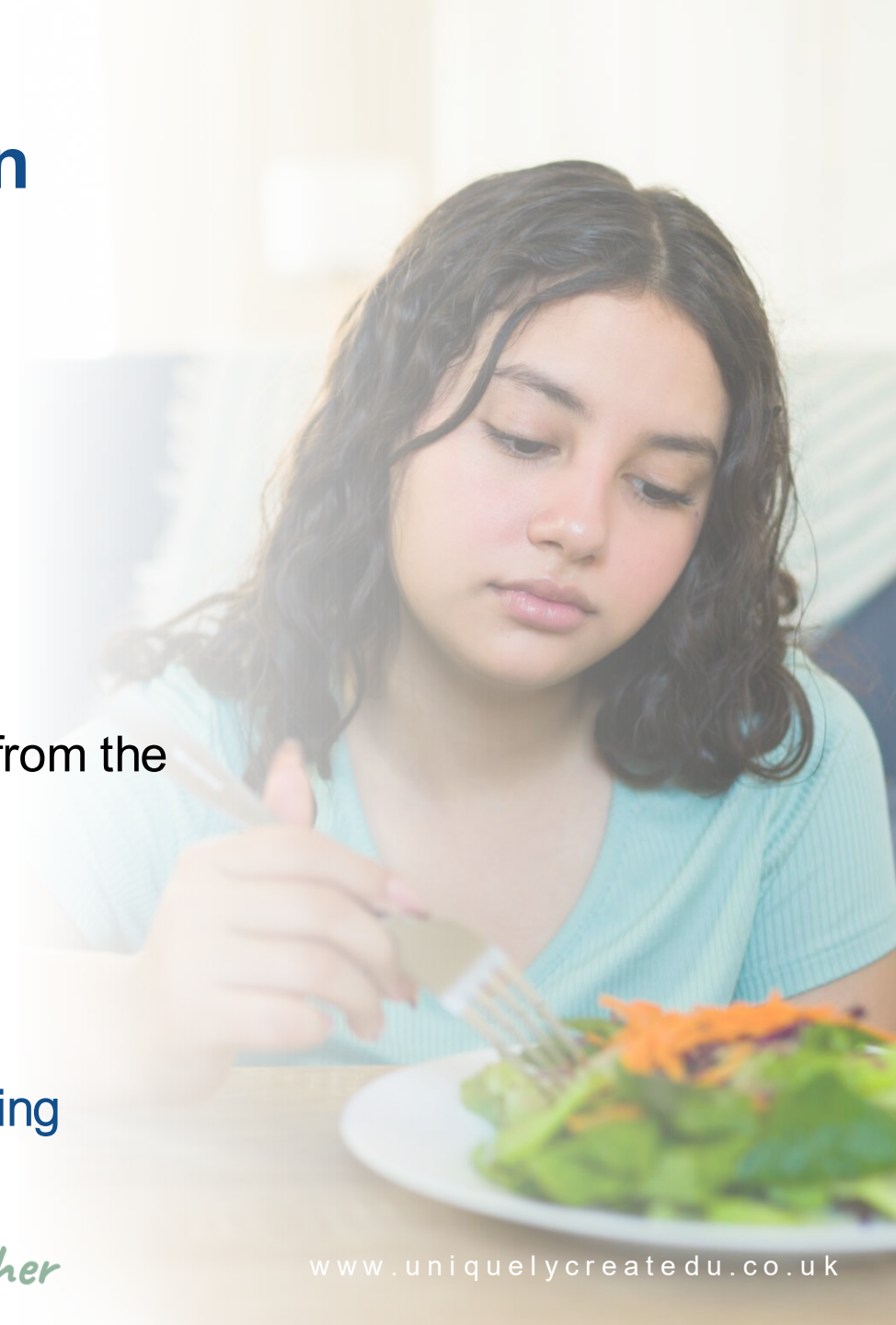
Difficulty recognising emotional and physiological feelings

Interoception: definition

The ability to sense, interpret and respond to internal signals from the body, often including hunger and satiety

Proposed that interoceptive difficulties are common in children who are in or have been in the care system

Associated with dysregulated eating patterns and emotional eating



Why does it matter?

CE compared to NCE children

Snuggs et al. (2025) *Appetite*, Volume 208

Extreme levels of eating behaviours have been associated with an increased risk of:

Eating disorders

Mental and physical health difficulties

Lower educational attainment

Presents a clear argument that CE children and their families would benefit from support around food, eating and mealtimes.



Why does it matter?

CE compared to NCE children

Snuggs et al. (2025) *Appetite*, Volume 208

Foster and adoptive parents cite mental health concerns and violent behaviour as more pressing, taking a firefighting approach over the mealtime environment.



Current strategies are ineffective

Snuggs et al. (2025) *Appetite*, Volume 208

Existing interventions and support packages related to food, eating, and mealtimes for caregivers and parents of CE children are not suitable.

It is therefore unreasonable to assume that the current strategies designed to assist families in managing their diets and mealtimes will effectively address the unique challenges faced by these families.





Expectations

of higher education institutes and care providers



Expectations of higher education institutes

Solomou S, et. al. (2023) A systematic review of the association of diet quality with the mental health of university students: implications in health education practice, *Health Education Research*, Volume 38, Issue 1, Pages 28–68

THE PROBLEM: Poor dietary patterns are associated with mental health problems in students

Current gaps in university mental health education

1. Mental health initiatives often overlook the dietary component
2. Students lack awareness of how food choices impact emotional wellbeing
3. Limited integration of nutrition in mental health support strategies

Expectations of higher education institutes

Solomou S, et. al. (2023) A systematic review of the association of diet quality with the mental health of university students: implications in health education practice, *Health Education Research*, Volume 38, Issue 1, Pages 28–68

THE ACTION: Integrate nutritional awareness into mental health education

Stepwise approach to integrate nutritional awareness

1. Raise awareness of the diet-mental health connection
2. Collaborate with nutrition experts for evidence-based guidance
3. Diversify delivery: formal courses, online modules, and physical materials

Expectations of higher education institutes

Solomou S, et. al. (2023) A systematic review of the association of diet quality with the mental health of university students: implications in health education practice, *Health Education Research*, Volume 38, Issue 1, Pages 28–68

THE STRATEGY: Take a multi-channel approach – we learn in different ways

Use diverse, accessible formats that reinforce the message across platforms

1. Curriculum Additions

Modules on diet and mental health in health-related degrees

2. Online Learning

Short self-paced courses or webinars accessible to all students

3. Onsite Campus Messaging

Leaflets, posters, and infographics in dorms, cafeterias, and wellbeing spaces

Expectations of higher education institutes

Solomou S, et. al. (2023) A systematic review of the association of diet quality with the mental health of university students: implications in health education practice, *Health Education Research*, Volume 38, Issue 1, Pages 28–68

THE OUTCOMES: Improved understanding of holistic mental health

Enabling students to become more proactive in managing their own wellbeing

1. Healthier eating habits
2. Enhanced academic performance and emotional resilience
3. Reduction in diet-related mental health concerns

Expectations of higher education institutes

Solomou S, et. al. (2023) A systematic review of the association of diet quality with the mental health of university students: implications in health education practice, *Health Education Research*, Volume 38, Issue 1, Pages 28–68

WIDER APPLICATION: Institutes other than universities should take a similar approach

Applicable to care settings, social services, colleges and schools

1. Foster and residential care workers
2. Social workers and support workers
3. Lecturers, teachers and staff
4. Mental health and wellbeing practitioners



Practical dietary strategies

to support mental resilience and emotional wellbeing



Practical dietary strategies

to support mental resilience and emotional wellbeing

Francis HM, Stevenson RJ, Chambers JR, Gupta D, Newey B, Lim CK. **A brief diet intervention can reduce symptoms of depression in young adults** - A randomised controlled trial. PLoS One. 2019

This was the first randomised controlled trial examining whether dietary intervention can reduce symptoms of depression in young adults



Practical dietary strategies

to support mental resilience and emotional wellbeing

Francis HM et al. (2019) PLoS One, 14 (10)

Diet Group

Received brief dietary guidance and support to follow a modified Mediterranean-style diet for 3 weeks.

Control Group

Received no dietary advice and continued their usual eating habits.



Diet Group

Food intake instructions for 3-weeks

Francis HM et al. (2019) PLoS One, 14 (10)

Vegetables 5 servings per day

Fruits 2 to 3 per day

Wholegrain cereals 3 per day

Protein 3 per day

(lean meat, poultry, eggs, tofu, legumes)

Unsweetened dairy 3 per day

Fish 3 per week

Nuts and seeds 3 tablespoons per day

Olive oil 2 tablespoons per day

Spices 1 teaspoon most days

(turmeric and cinnamon)

Conversely, they were **instructed to decrease:**

Refined carbohydrates, sugar, fatty or processed meats and soft drinks

Practical dietary strategies

to support mental resilience and emotional wellbeing

Francis HM et al. (2019) PLoS One, 14 (10)

After just 3 weeks, there was a **significant reduction in depression symptoms**

The diet group not only saw improvements in depression scores but also reported **lower anxiety and stress levels**

Participants who continued healthy eating **maintained reduced depression scores** at the three-month follow-up.



Practical dietary strategies

to support mental resilience and emotional wellbeing

- Emphasise healthy, nourishing food first
- Eat regular meals, no skipping!
- Eat balanced meals



Practical dietary strategies

to support mental resilience and emotional wellbeing

“Balanced Meals”

Include a wide variety of food groups at each meal.

Aim for a balance of carbohydrates, proteins, healthy fats, fruits, and vegetables.

Think about having the colours of the rainbow on your plate.

Practical dietary strategies

to support mental resilience and emotional wellbeing

- Emphasise healthy, nourishing food first
- Eat regular meals, no skipping!
- Eat balanced meals
- Eat nutrient-dense foods



Practical dietary strategies

to support mental resilience and emotional wellbeing

Why are nutrient-dense foods important?

Nutrient-dense foods are foods that provide a high amount of essential nutrients relative to their calorie content.

In other words, they deliver a lot of beneficial nutrients for relatively few calories.

Practical dietary strategies

to support mental resilience and emotional wellbeing

NUTRIENT-DENSE FOODS

Fruits & Vegetables – Brain-Boosting Essentials

- Leafy greens (e.g., spinach, kale)
- Cruciferous vegetables (e.g., broccoli, cauliflower)
- Peppers, lettuces
- Fresh or frozen are both beneficial



Practical dietary strategies

to support mental resilience and emotional wellbeing

NUTRIENT-DENSE FOODS

Whole Grains – Steady Energy & Mood Support

- Brown rice
- Oats
- Wholemeal bread
- Supports mood regulation



Practical dietary strategies

to support mental resilience and emotional wellbeing

NUTRIENT-DENSE FOODS

Lean Proteins – Building Blocks for Mood

- Fish, eggs and dairy
- Legumes
- Nuts and seeds
- Support cognitive function and emotional balance



Practical dietary strategies

to support mental resilience and emotional wellbeing

Practical Habits for Sustainable Change

Meal planning

Prepare meals in advance to avoid impulsive, less nutritious choices

Gradual swaps

Replace sugary snacks with nuts, fruits, or yoghurt

Shared meals

Eating with others can provide psychological and social benefits, enhancing wellbeing



Practical dietary strategies

to support mental resilience and emotional wellbeing

Stay Hydrated – Boost mood, alertness and cognition

STAY HYDRATED

to avoid adverse effects of mild dehydration



Fatigue

Impaired Cognition

Low Mood

Water is best

but herbal teas and diluted juices are good sources



Practical dietary strategies

to support mental resilience and emotional wellbeing

Limit Certain Substances

Caffeine

Excessive caffeine can disrupt sleep and increase anxiety or irritability

Sugary and ultra-processed foods

These can cause rapid spikes and drops in blood sugar, affecting mood and energy

Alcohol

Minimise consumption, as it can negatively affect mood and sleep



Unaddressed mental health

Prioritising Nutrition for Mental Health to Change Lives

Murray, E.T (2020) Office of National Statistics Longitudinal Study. BMC Public Health 20, 735

Unaddressed mental health needs are seen as a key driver for the poorer outcomes we see in care-experienced adults, such as unemployment, homelessness and contact with the criminal justice system

Further Education and Insight



The Food Programme

School Dinners - Past, Present and Future

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4

School Dinners – Past, Present and Future, Radio 4

An excellent example of cultural change

In this edition of The Food Programme, Sheila Dillon visits a forward-thinking school in West London that bakes its own bread with flour made from the wheat that grows just outside the school kitchen!

What we've covered

Prevalence of mental health in children and adolescents

Care-experienced students are disproportionately affected by mental health problems

Link between nutrition and mental health

Unhealthy diets and skipped meals are causes of increased depressive, anxious and stress-related symptoms

Mealtime challenges in CE and NCE children

CE children: 6x higher adverse childhood events. As traumatic ACEs increase the level of problematic eating behaviours increases

What we've covered

Considered how diet and obesity affect mental health and the brain

Learnt about stress-induced neurophysiological pathways that alter metabolism and result in obesity and the metabolic syndrome.

Expectations of higher education institutes and care providers

Mental health initiatives often overlook the dietary component. There is a need to integrate nutritional expertise and awareness into mental health education.

Practical dietary strategies to support mental resilience and emotional wellbeing

Research shows that following the Mediterranean-style diet is associated with significant improvements in depression, anxiety, and stress.

THANK YOU

Your feedback would be greatly appreciated



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