2020 Dietary Guidelines Advisory Committee: Frequency of Eating

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Topic Areas (in order of protocol development)

- Frequency of eating and all-cause mortality*
- Frequency of eating and growth, size, body composition, overweight, obesity*
- Frequency of eating and gestational weight gain*
- Frequency of eating and post-partum weight loss*
- Frequency of eating and cardiovascular disease*
- Frequency of eating and type 2 diabetes*

* Protocols to be discussed today; available at DietaryGuidelines.gov

Key Definitions

- Frequency of eating
 - Number of daily eating occasions
 - Timing of daily eating occasions
 - Timing of weekly eating occasions (weekday or weekend)
 - Meal skipping
 - Fasting (time restricted eating)
- Eating occasion ingestive event [preload, meals or snacks; food or beverage (caloric, non-caloric)]
- Fasting absence of an ingestive event, ≥ 8 hours during a waking period in a 24 hour period
 - Time restricted eating set pattern of eating occasions
- Meal dependent upon timing throughout the day (morning, midday, evening)

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Eatin What frequency of eating is NOT –
 Frequency of intake of a single food, beverage, or category of foods or beverages
 Studies that do not have eating occasions across the day

 Meal – dependent upon timing throughout the day (morning, midday, evening)

Inclusion and Exclusion Criteria

- Propose standard criteria be used for:
 - Study Design
 - Publication Status
 - Language of Publication
 - Country
 - Study participants
 - Health Status of Participants

Inclusion and Exclusion Criteria

Category	Inclusion Criteria	Exclusion Criteria
Intervention/ exposure	 Frequency of eating: Number of daily eating occasions Timing of daily eating occasions Timing of weekly eating occasions (weekday or weekend) Meal skipping Fasting (time restricted eating) 	 Studies that only examine frequency of intake of a single food, beverage or category of foods or beverages (i.e. frequency of milk consumption, frequency of seafood consumption) Studies that do not have eating occasions across the day
Age of study participants	 Age at intervention/exposure and outcome: Children and adolescents (2-18 years) Adults (19-64 years) Older adults (ages 65 and older) 	 Age at intervention/exposure and outcome: Infants and toddlers (0-24 months old)
Date of publication	 January 2000 – June/July 2019 	 Articles published prior to or after January 2000 – June/July 2019
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Inclusion and Exclusion Criteria

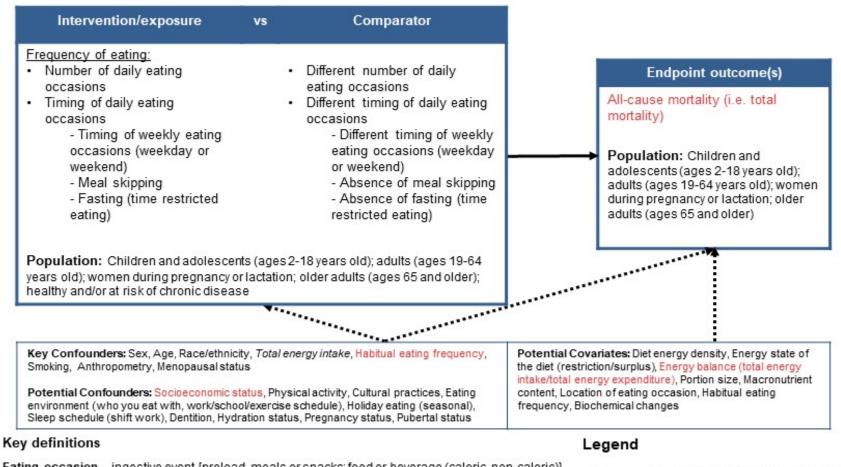
Category	Inclusion Criteria	Exclusion Criteria
Health Status of Study Participants	 NESR Standard Criteria 	 NESR Standard Criteria Studies that exclusively enroll subjects post bariatric surgery
Dietary Data Collection	 A minimum of 3 days of dietary data collection and on at least 2 occasions 	• N/A
Size of Study Groups	 15 participants for studies using within-subject analyses, or 30 participants for studies using between-subject analysis, or A power calculation included 	• N/A



What is the relationship between frequency of eating and all-cause mortality?

Frequency of Eating and All-Cause Mortality

Systematic review question: What is the relationship between the frequency of eating and all-cause mortality?



Eating occasion – ingestive event [preload, meals or snacks; food or beverage (caloric, non-caloric)] Fasting – absence of an ingestive event, ≥ 8 hours during a waking period in a 24 hour period

Time restricted eating – set pattern of eating occasions

Meal – dependent upon timing throughout the day (morning, midday, evening)

All-cause mortality- the total number of deaths from all causes during a specific time-period.

The relationship of interest in the systematic review

Factors that may impact the
relationship of interest in the systematic review



What is the relationship between the frequency of eating and growth, size, body composition, and risk of overweight and obesity?

Frequency of Eating and Growth, Size, Body Composition, Overweight, and Obesity

Systematic review question: What is the relationship between the frequency of eating and growth, size, body composition, and risk of overweight and obesity?

Intervention/exposure	vs Comparator	Endpoint outcome(s)
 Frequency of eating: Number of daily eating occasions Timing of daily eating occasions Timing of weekly eating occasions Timing of weekly eating occasions (weekday or weekend) Meal skipping Fasting (time restricted eating) Population: Children and additional contents of the standard s	 Different number of daily eating occasions Different timing of daily eating occasions Different timing of weekly eating occasions (weekday or weekend) 	 Weight, weight-for-age Height, length/stature-for-age BMI, BMI z-score, weight-for-length Body circumferences: head, arm, waist, thigh, neck Body composition and distribution (e.g., % fat mass, fat-free mass, lean mass) Incidence and prevalence of: -Underweight, failure to thrive, stunting, wasting -Healthy weight -Overweight -Obesity Population: Children and adolescents (ages 2-19 years old); adults (ages 19-64 years old); older adults (ages 65 and older).

Physical activity, Smoking, Menopa Potential Confounders: Socioeco eat with, work/school/exercise sche	e/ethnicity, Total energy intake, Habitual eating frequenc usal status nomic status, Cultural practices, Eating environment (wh edule), Holiday eating (seasonal), Sleep schedule (shift w ncy status, Pubertal status, Medication and substance us	the diet (restriction/surplus), Energy balance (total energy intake/total energy expenditure), Portion size, Macronutrient content, Location of eating occasion, Habitual eating frequency, Specialized diet including all-liquids diet,

Key definitions

Eating occasion – ingestive event [preload, meals or snacks; food or beverage (caloric, non-caloric)] Fasting – absence of an ingestive event, \geq 8 hours during a waking period in a 24 hour period

11 • Time restricted eating – set pattern of eating occasions

Meal – dependent upon timing throughout the day (morning midday evening)

Legend

The relationship of interest in the systematic review

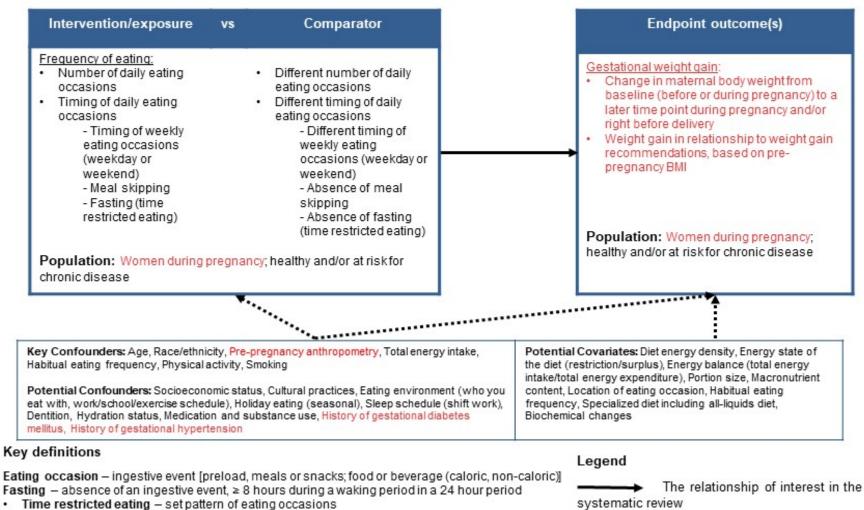
Factors that may impact the



What is the relationship between the frequency of eating during pregnancy and gestational weight gain?

Frequency of Eating and Gestational Weight Gain

Systematic review question: What is the relationship between the frequency of eating during pregnancy and gestational weight gain?



Factors that may impact the

relationship of interest in the systematic review

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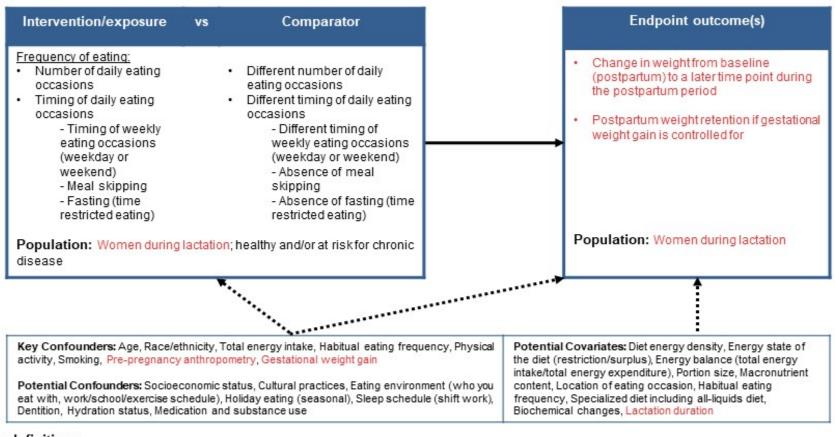
Meal – dependent upon timing throughout the day (morning, midday, evening) Gestational weight gain - weight a woman gains during pregnancy (CDC)



What is the relationship between the frequency of eating during lactation and post-partum weight loss?

Frequency of Eating and Post-Partum Weight Loss

Systematic review question: What is the relationship between the frequency of eating during lactation and postpartum weight loss?



Key definitions

Eating occasion – ingestive event [preload, meals or snacks; food or beverage (caloric, non-caloric)] Fasting – absence of an ingestive event, ≥ 8 hours during a waking period in a 24 hour period

Time restricted eating – set pattern of eating occasions

Meal - dependent upon timing throughout the day (morning, midday, evening)

15 Postpartum weight retention: amount of weight that remains during the postpartum period minus the woman's pre-pregnancy weight (IOM, 2009)

Legend

The relationship of interest in the systematic review

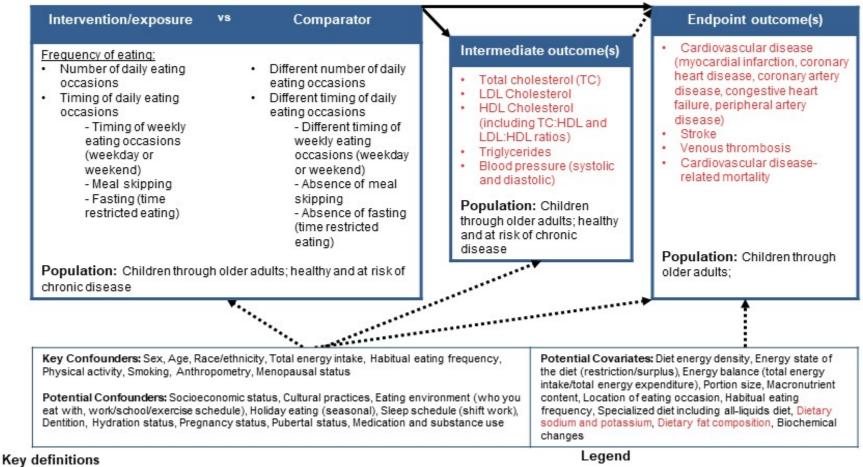
Factors that may impact the
relationship of interest in the systematic review



What is the relationship between frequency of eating and cardiovascular disease?

Frequency of Eating and Cardiovascular Disease

Systematic review question: What is the relationship between the frequency of eating and risk of cardiovascular disease?



Eating occasion – ingestive event [preload, meals or snacks; food or beverage (caloric, non-caloric)] Fasting – absence of an ingestive event, \geq 8 hours during a waking period in a 24 hour period

Time restricted eating – set pattern of eating occasions

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Meal - dependent upon timing throughout the day (morning, midday, evening)

The relationship of interest in the

systematic review Factors that may impact the

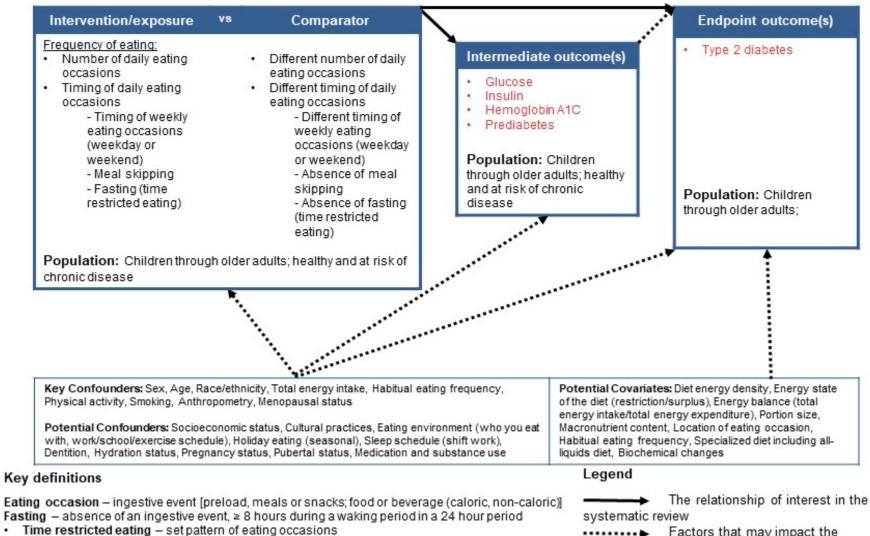
relationship of interest in the systematic review



What is the relationship between the frequency of eating and risk of type 2 diabetes?

Frequency of Eating and Type 2 Diabetes

Systematic review guestion: What is the relationship between the frequency of eating and risk of type 2 diabetes?



Meal - dependent upon timing throughout the day (morning, midday, evening)

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Factors that may impact the relationship of interest in the systematic review

Next Steps

- Begin screening search results
- Extract data and conduct risk of bias assessments
- Prepare the evidence synthesis
- Develop graded conclusion statements
- Document limitations and research recommendations

2020 Dietary Guidelines Advisory Committee: Frequency of Eating



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