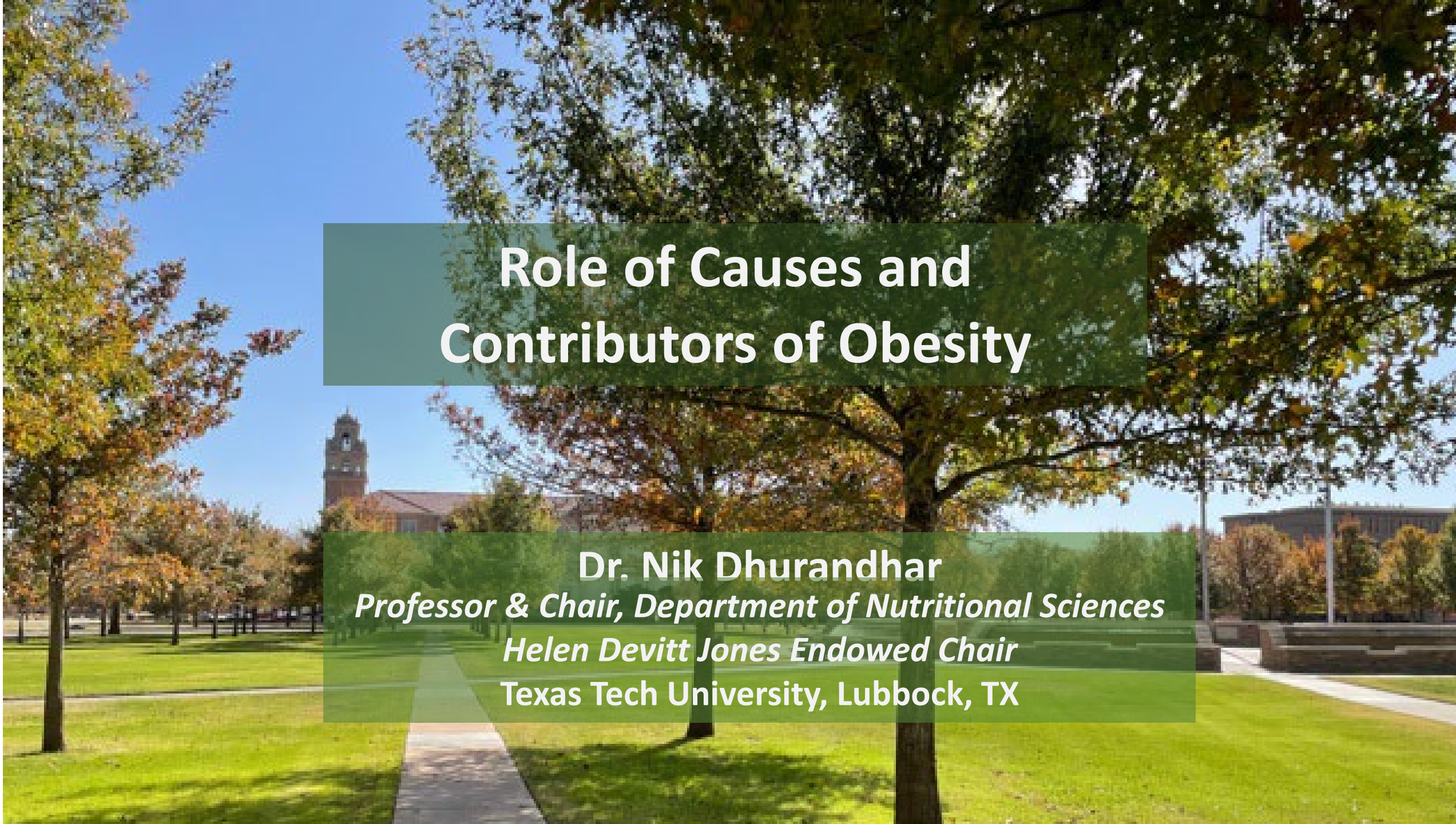

Role of Causes and Contributors of Obesity

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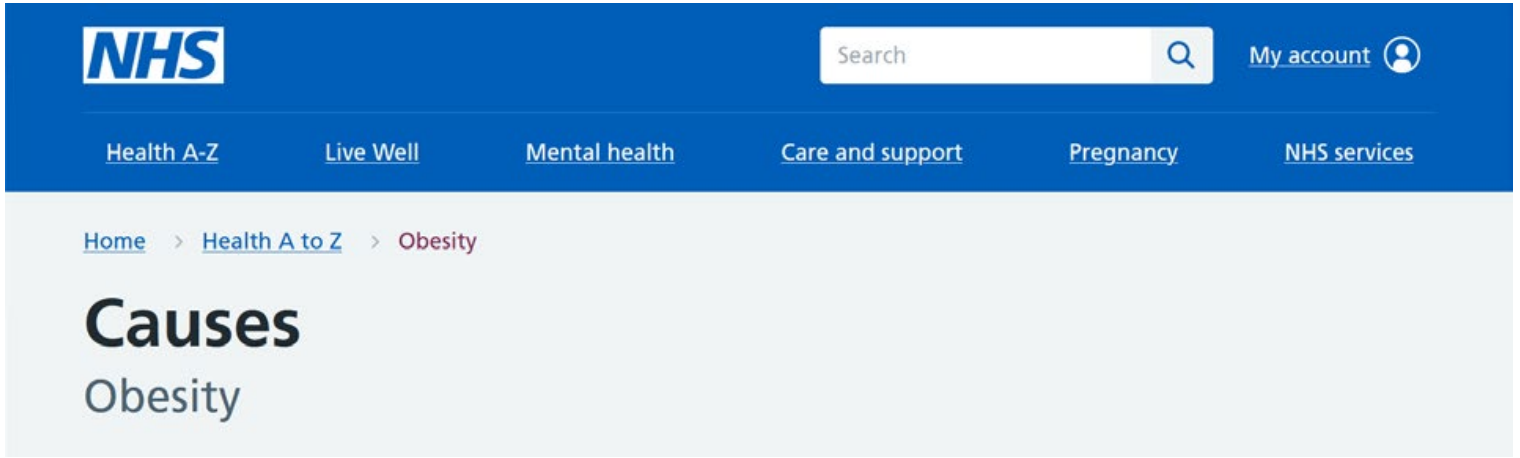
Key Point 1: Define “Obesities”

A collection of diseases with multiple causes, contributors, and clinical expressions

Common view of obesity



"Obesity is generally caused by eating too much and moving too little."

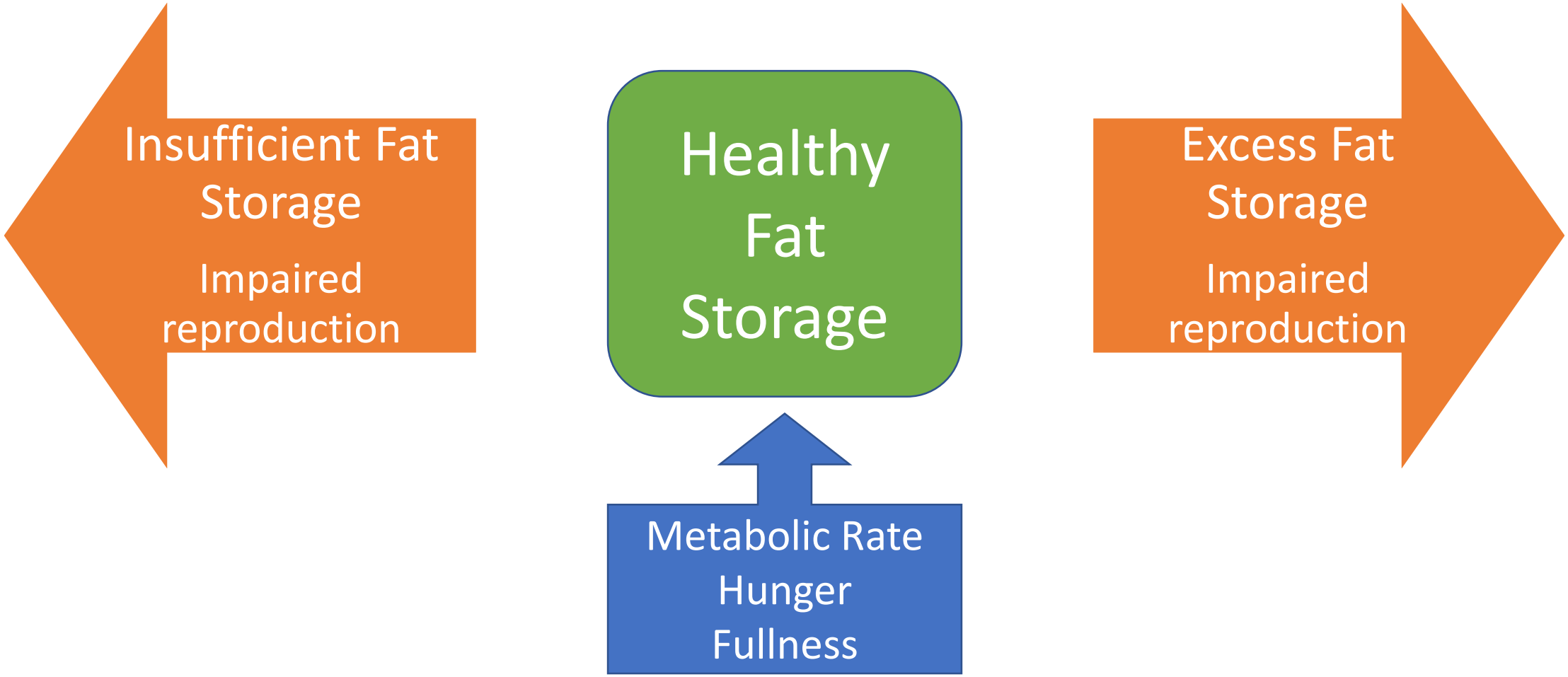
"(obesity develops…) as a result of poor diet and lifestyle choices."

https://www.nhs.uk/conditions/obesity/causes/

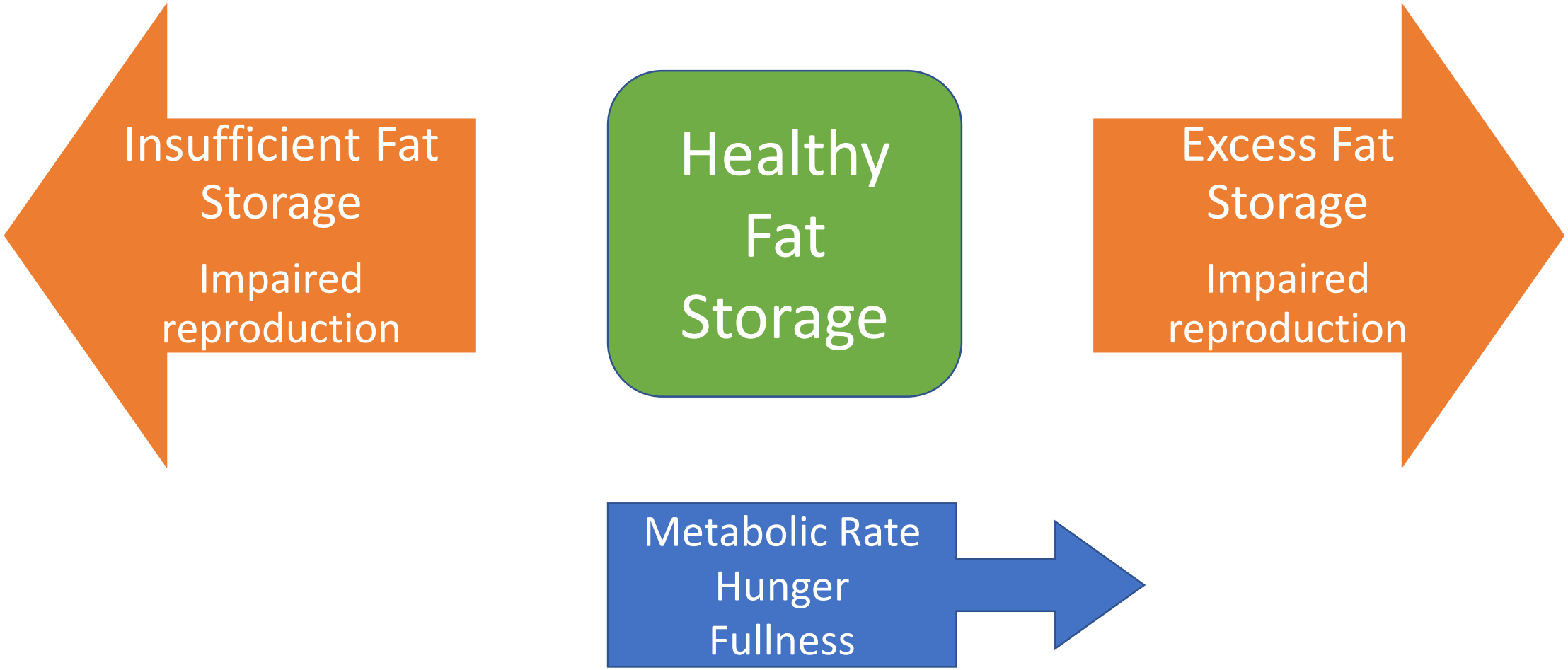
- Swelling (edema), is not caused by drinking excessive water, but due to impairment in water balance regulation

- Obesity is due to impairment in energy balance regulation

In a healthy state, body fat is maintained within a range



In people with obesity, this homeostatic system is impaired or overwhelmed.



Alternate view of obesity

Obesity is caused by an inability of the body to maintain fat within a healthy range

Causes	Contributors
Intrinsic	Extrinsic
Can induce obesity without contributors	Can lead to obesity in presence of causes
Non-preventable, treatable	Preventable, modifiable, treatable

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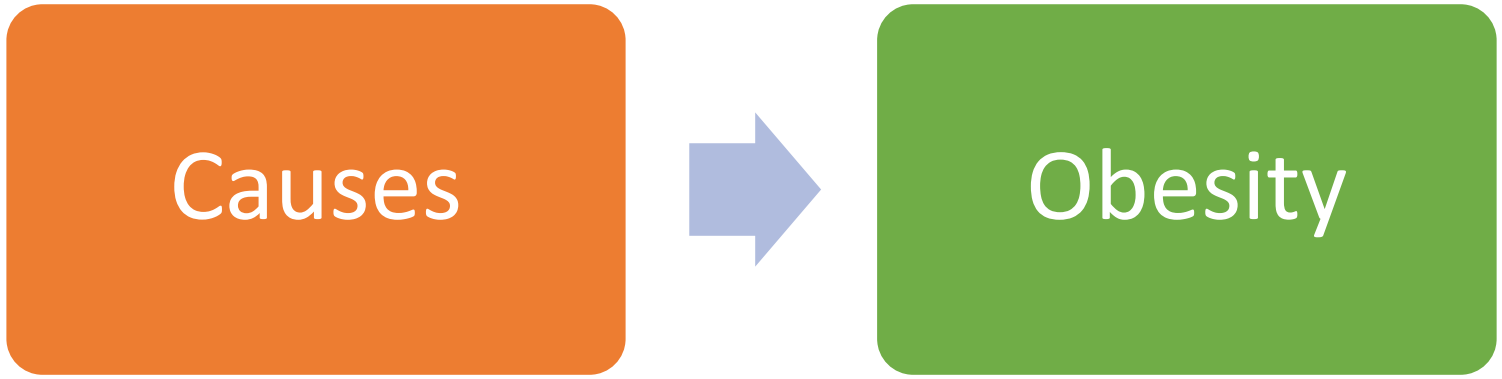

- Genes: e.g. Leptin, MC4R
- Hormones: e.g. thyroid, hunger, satiety
- Brown fat
- Fat oxidation
- Infections
- Environmental chemicals

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- Energy dense food
- Large portions
- Ultra processed food
- Sleep duration & quality
- Physical activity
- Psychological health
- Tobacco cessation
- Food insecurity

- Genes: e.g. Leptin, MC4R
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- Brown fat
- Fat oxidation
- Infections
- Environmental chemicals

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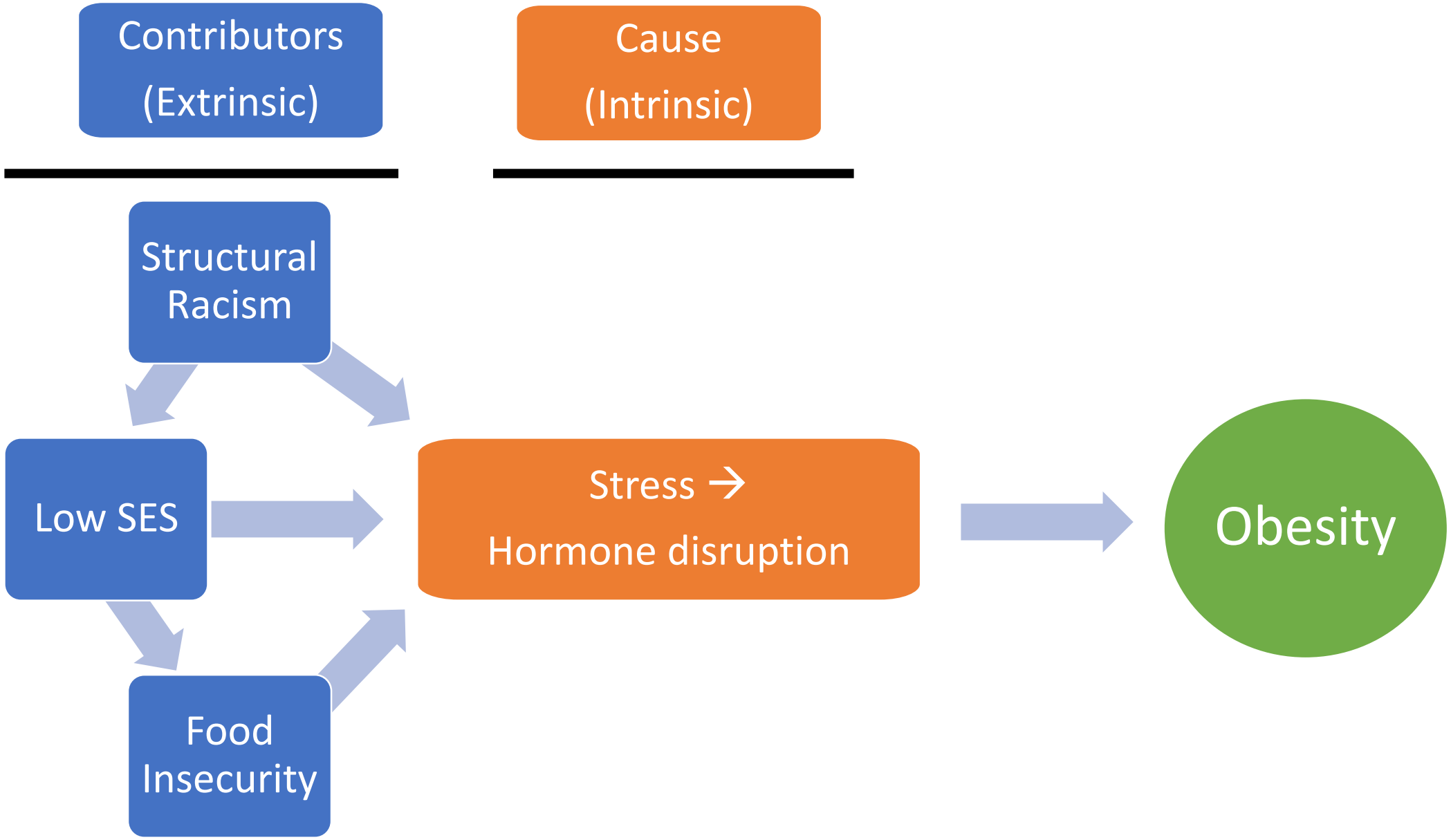
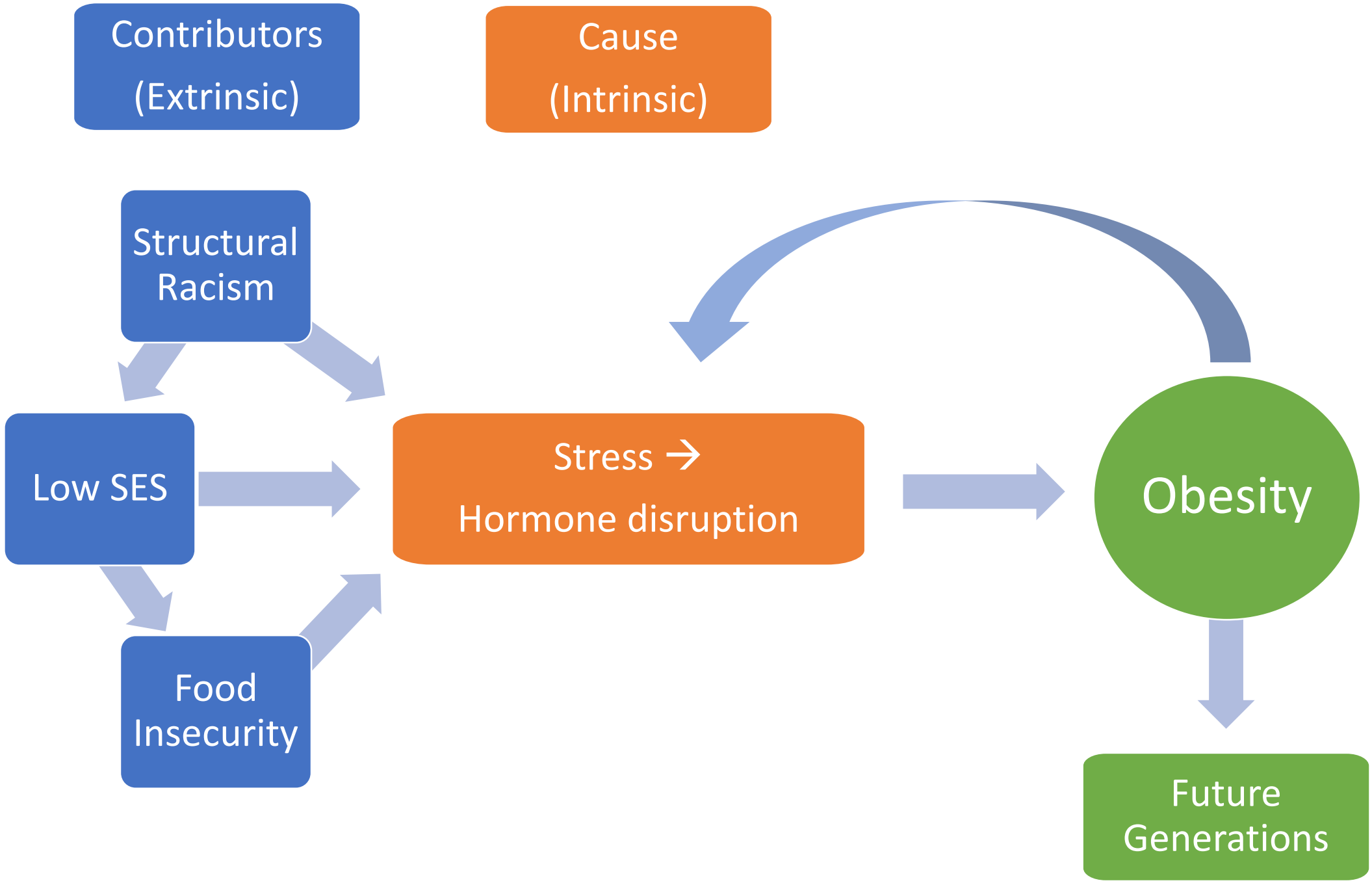
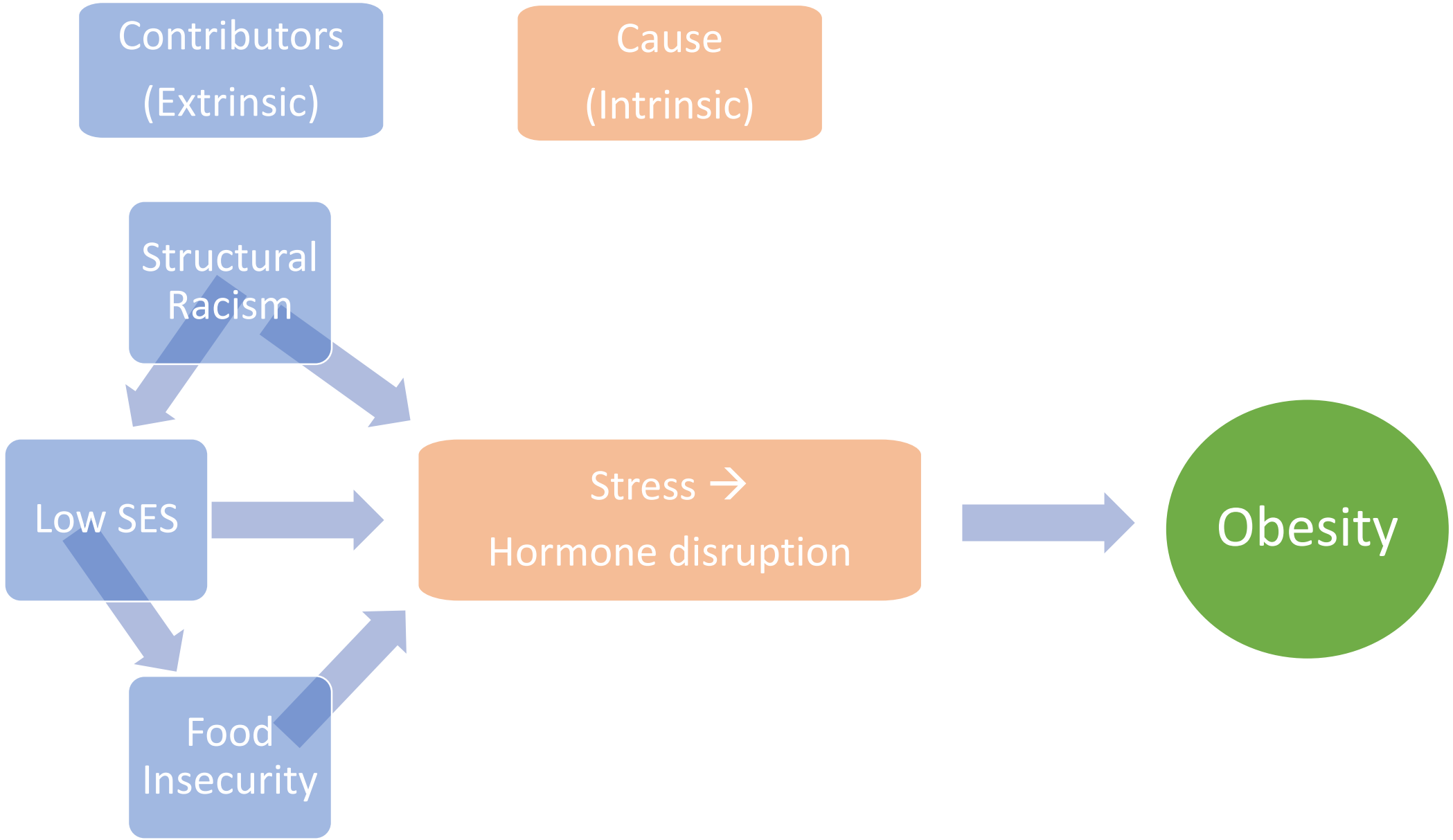

Contributors
(Extrinsic)
Cause
(Intrinsic)
Structural Racism
Low SES
Food Insecurity
Stress →
Hormone disruption
Obesity


Contributors
(Extrinsic)
Cause
(Intrinsic)
Structural Racism
Low SES
Food Insecurity
Stress →
Hormone disruption
Obesity
Future Generations


Contributors
(Extrinsic)
Cause
(Intrinsic)
Structural
Racism
Low SES
Food
Insecurity
Stress →
Hormone disruption
Obesity

185 million adults with overweight or obesity in the US

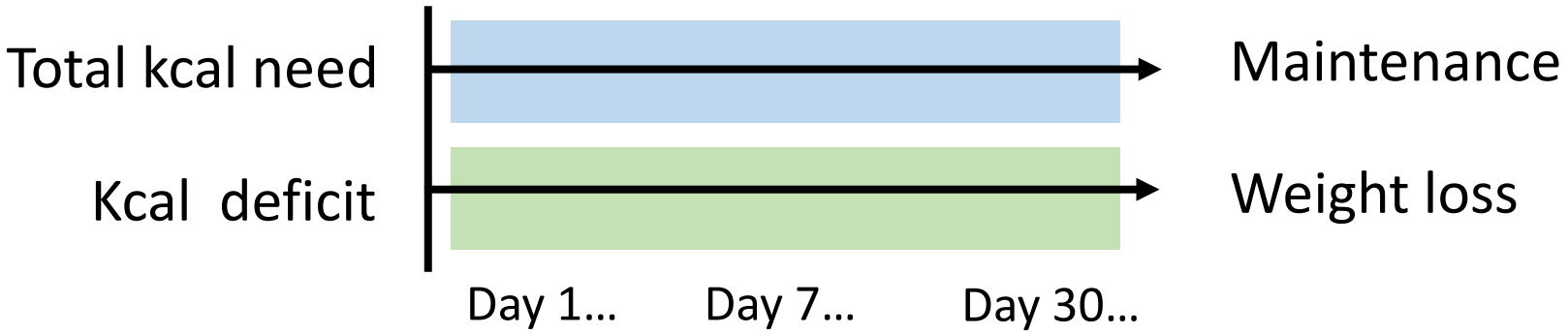
Obesity in an individual is not spontaneously reversible without a substantial and sustained negative energy balance.

Treatment of individuals affected with obesity is imperative.

On a community or national level, addressing contributors may prevent or minimize further expression of obesity.

Key Point 2:

Obesity treatment requires substantial, chronic negative energy balance



General weight loss suggestions do not produce meaningful weight loss

Placebo groups of weight loss drug trials

- Counseling for diet and physical activity.
- Eat less, move more, eat smaller portions, less fat, etc.

→ 1 – 2% weight loss after 1 year treatment.

Unstructured weight loss instructions are less likely to succeed

- Unfamiliarity with calorie requirement and daily variation
- Unfamiliarity with calorie value of food or physical activity
- Body resists weight loss (↓ RMR & satiety ↑ hunger)
- Negative energy balance is difficult to achieve or sustain

Emphasis on a single food item = Digging a hole in water

Individualized & structured treatment is needed for people with obesity

Key Point 3:
Addressing obesity meaningfully requires

1) Individualized, effective, wide scale treatment
2) Minimizing or preventing additional expression

Addressing obesity in individuals

Facilitating obesity management for individuals	System-wide changes
• Identify and address operating cause(s) in individuals	• Minimize maintaining contributors
e,g, Poor sleep: Address sleep apnea	e.g. Poor sleep: Address conditions leading to disturbed sleep

Addressing obesity effectively

Enabling reduction in energy intake for individuals	System-wide changes
• Personalized diet for negative energy balance	• Promoting conducive environment
e.g. Development of effective tools and strategies, diets, drugs and surgery, devices	e.g. Awareness, screening, access to care, availability and access to lower energy density food options, taste and cost considerations

Addressing obesity effectively

Promoting increase in energy expenditure for individuals	System-wide changes
• Physical activity (PA) promotion	• Resources to encourage PA
e.g. personalized PA prescription, approved drugs / devices	e.g. Policies, resources, awareness, easy access to facilities,

Addressing obesity on a wider scale

Making obesity management widely available for individuals	System-wide changes
• Inclusion of PCPs in addition to obesity specialists	• Obesity management training in med school • Greater and better tools to manage obesity • Insurance coverage • Access to care
e.g. inclusion of physicians, NP, PA, RD	e.g. Policies, resources, awareness, easy access to facilities, reducing barriers

Minimizing or preventing obesity expression

Minimizing or preventing weight gain or regain in individuals	System-wide changes
• Identify additional risk factors for obesity development. • Identify at-risk individuals.	• Resources to minimize risk factors for obesity expression
e.g. screening for gene defects, hypothyroidism,	e.g. reducing structural racism, food insecurity, economic stability,

SUMMARY

- Obesities have causes (intrinsic) and contributors (extrinsic)

- Effective obesity treatment of an individual requires structured and personalized treatment

- Effectively addressing obesity on a community and national level will need:

    a) Effective and wide scale obesity treatment of individuals, and supporting system-wide changes

    b) Preventing excess weight gain or regain in at-risk individuals, and by minimizing system-wide risk factors for obesity expression


Thank you !
Salzburg, Austria. 2012