

—  
KATHY LADD, RD & MALEEN AVERY, MD

# Introduction to Intermittent Fasting

---

# Who We Are

---

KATHY LADD, RD

Certified in LCHF for Health Promotion  
and Medical Nutrition Therapy

MALEEN AVERY, MD

Sport & Musculoskeletal Medicine  
(CASEM)

Diplomate, American Board of Obesity  
Medicine

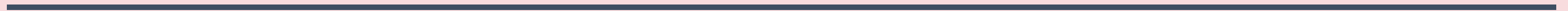
---

# Disclosures



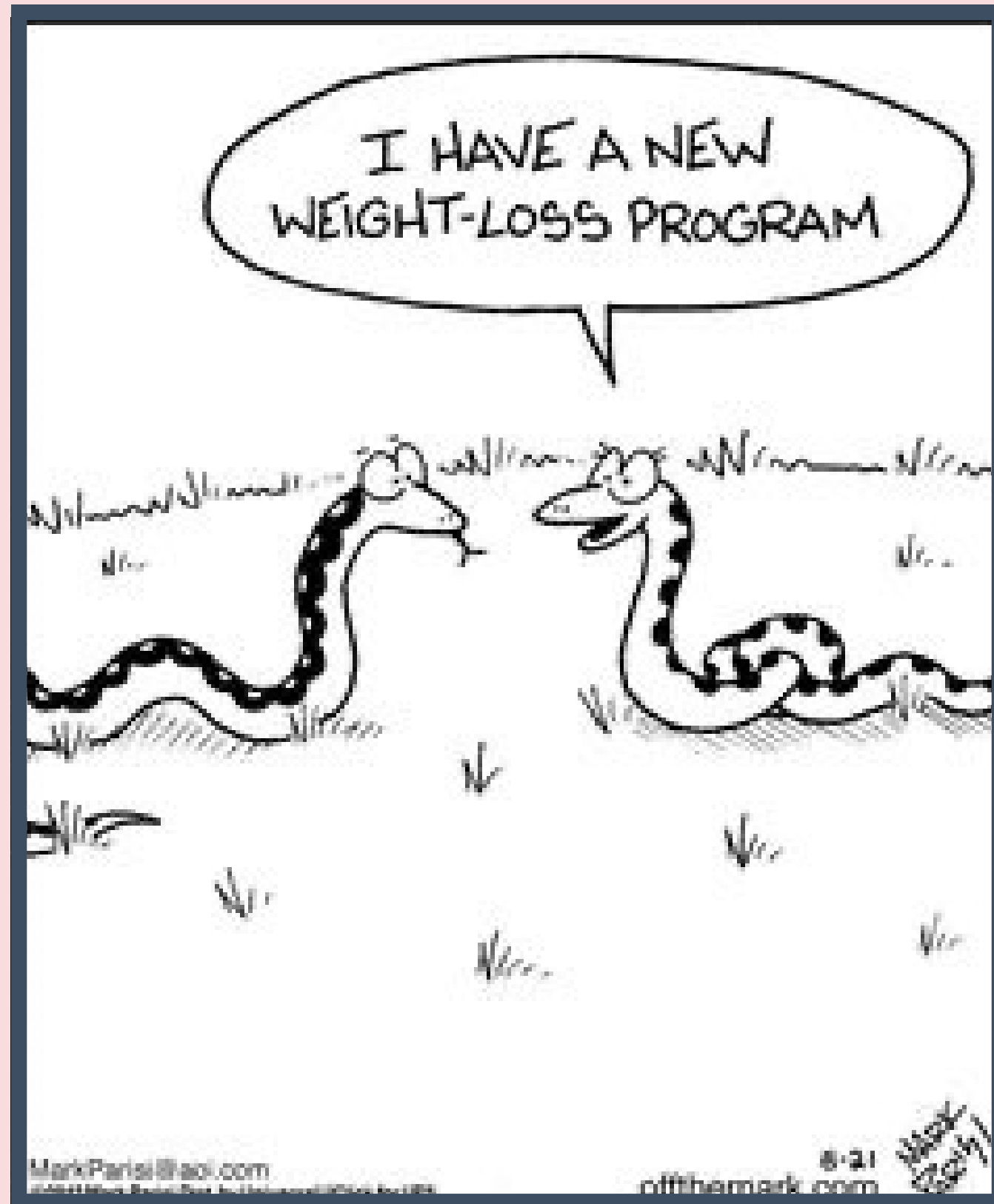
**MD Lifestyle Solutions**

**Weight Management, Metabolic & Exercise Medicine**



# Objectives

---



What is Intermittent Fasting ?

What Happens During A Fast?

How to implement a Fasting Routine

---

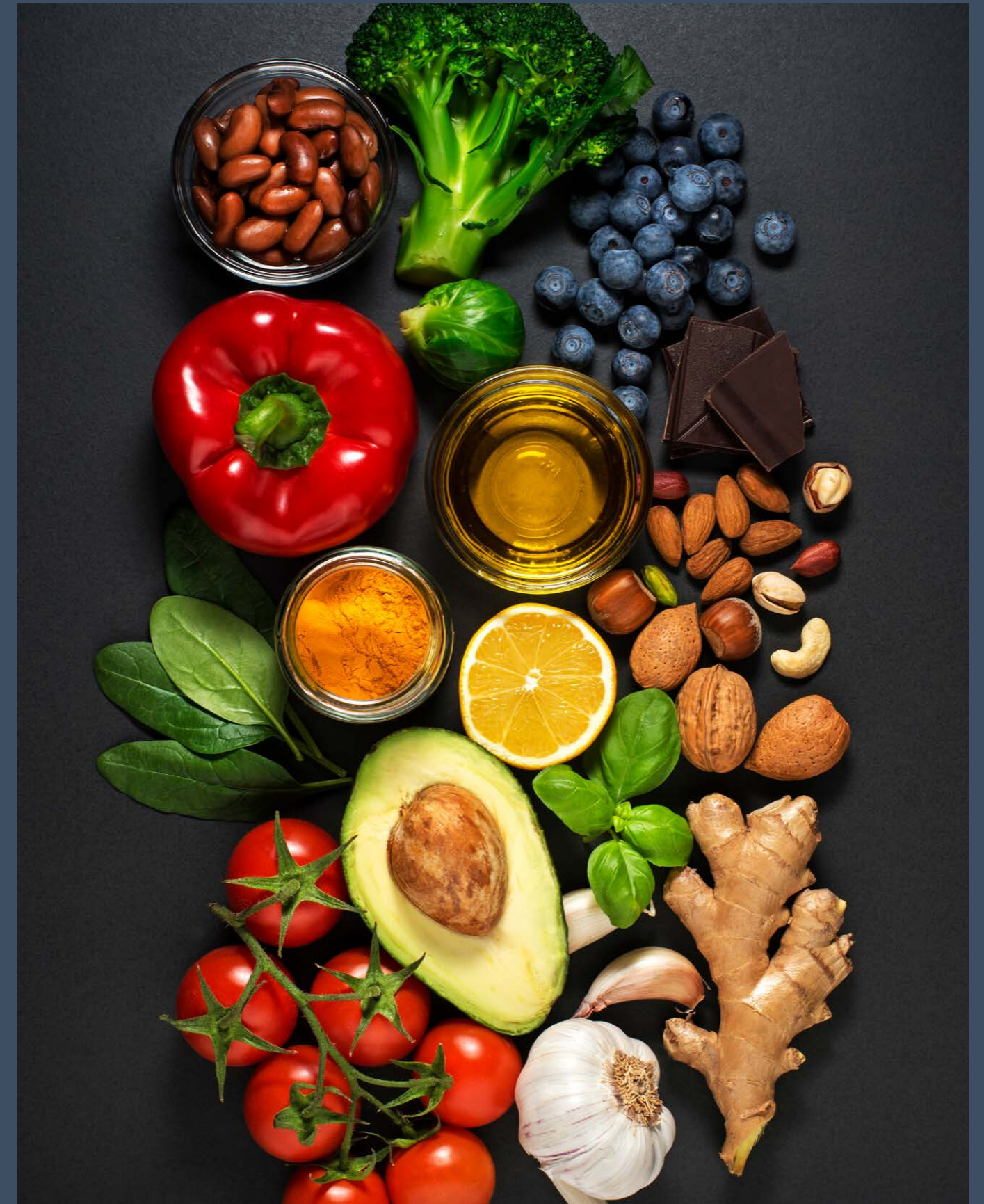
ADAPTIVE RESPONSE

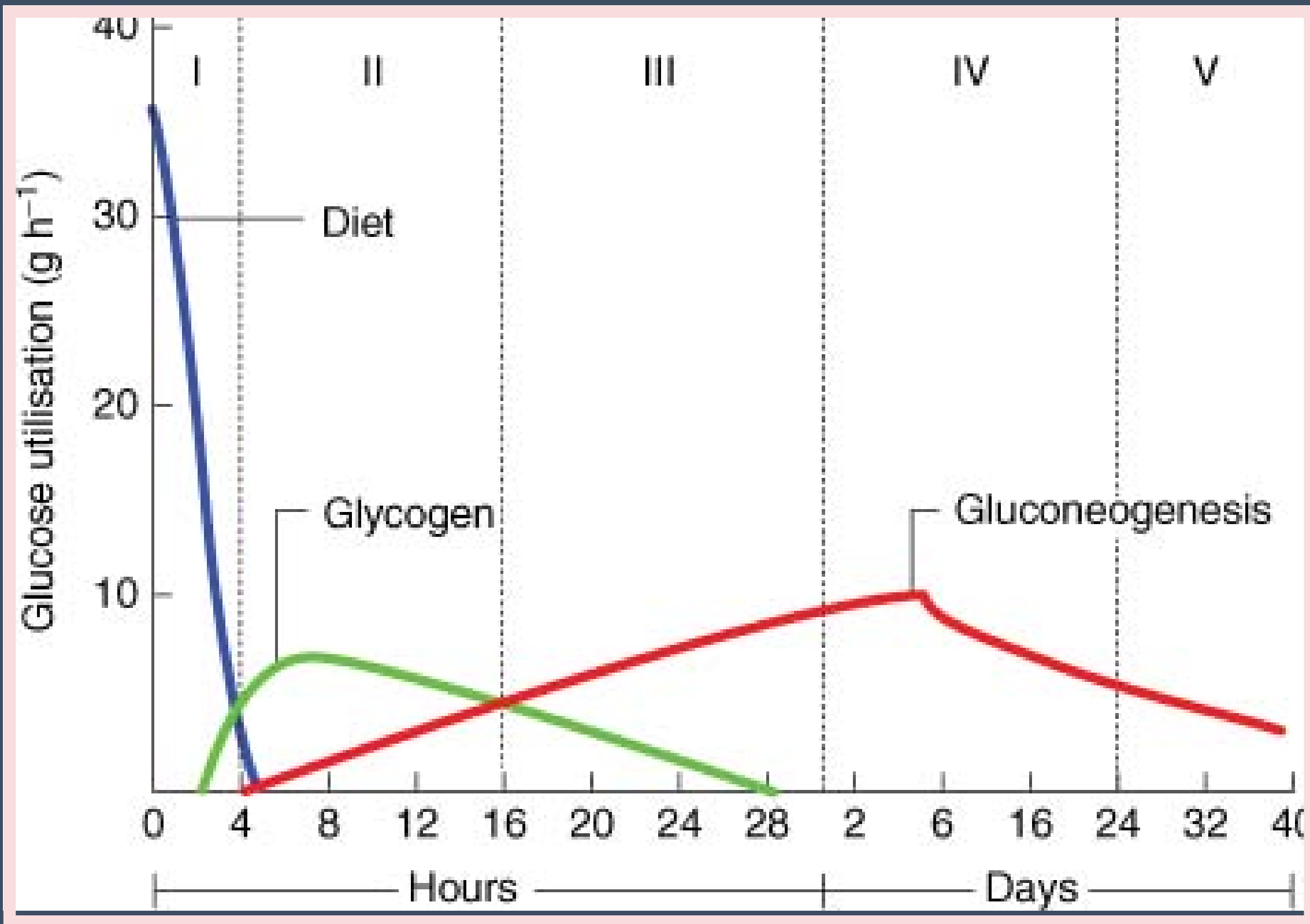
NOT STARVATION

- Food is available
- Voluntary
- Controlled

# What is Intermittent Fasting ?

---





Blood glucose remains stable via:

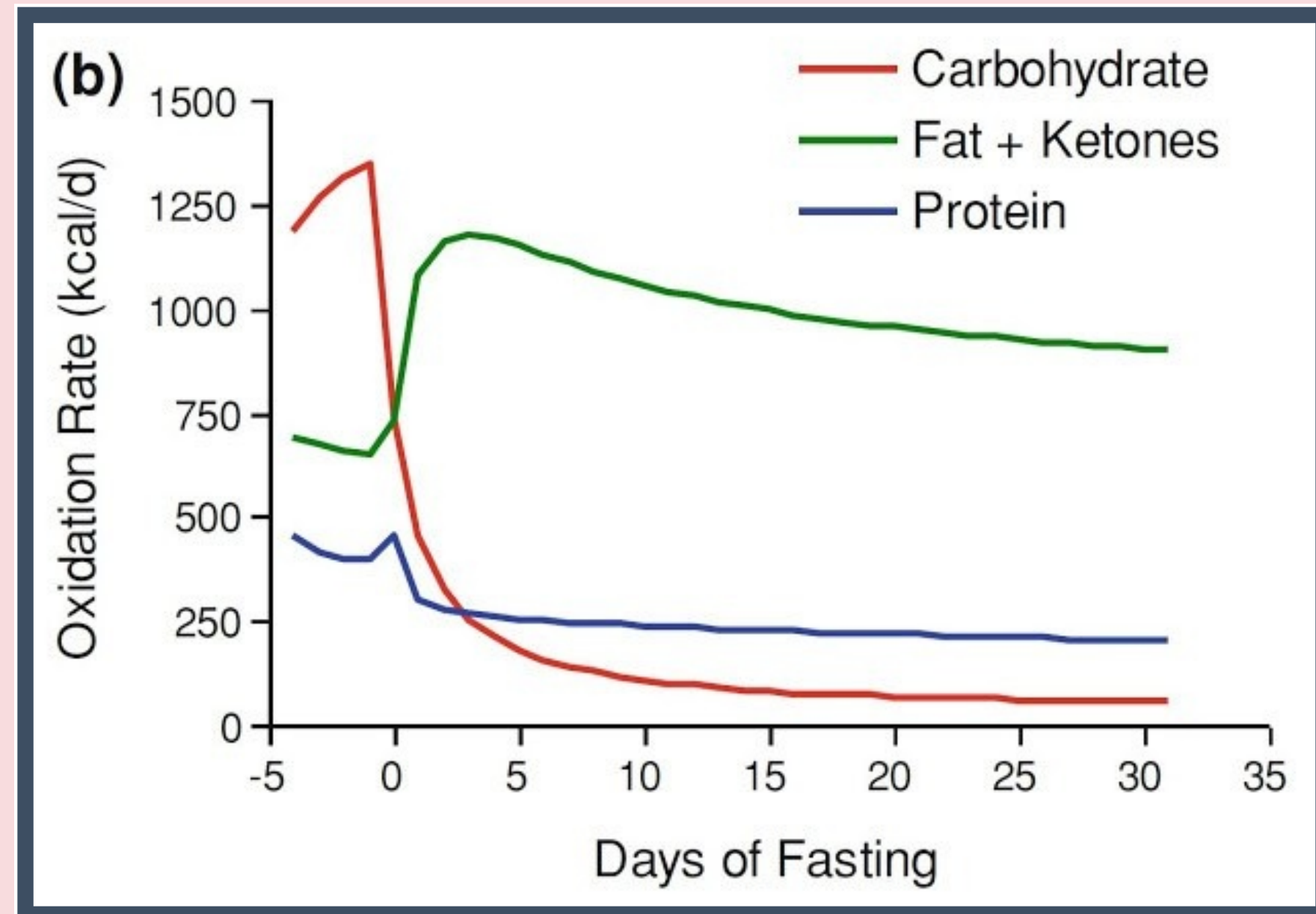
- Glycogenolysis
- Gluconeogenesis

# Fasting Physiology

# Fasting Physiology

## FUEL SWITCH:

- Glucose oxidation decreases
- Fat oxidation increases



SOURCE: MCCUE, ED, COMPARATIVE PHYSIOLOGY OF FASTING, STARVATION & FOOD LIMITATION

# Question



—

WHICH OF THE FOLLOWING OCCURS DURING IF?

A- Starvation Mode

B- Muscle Breakdown

C- Basal Metabolic Rate Slows Down

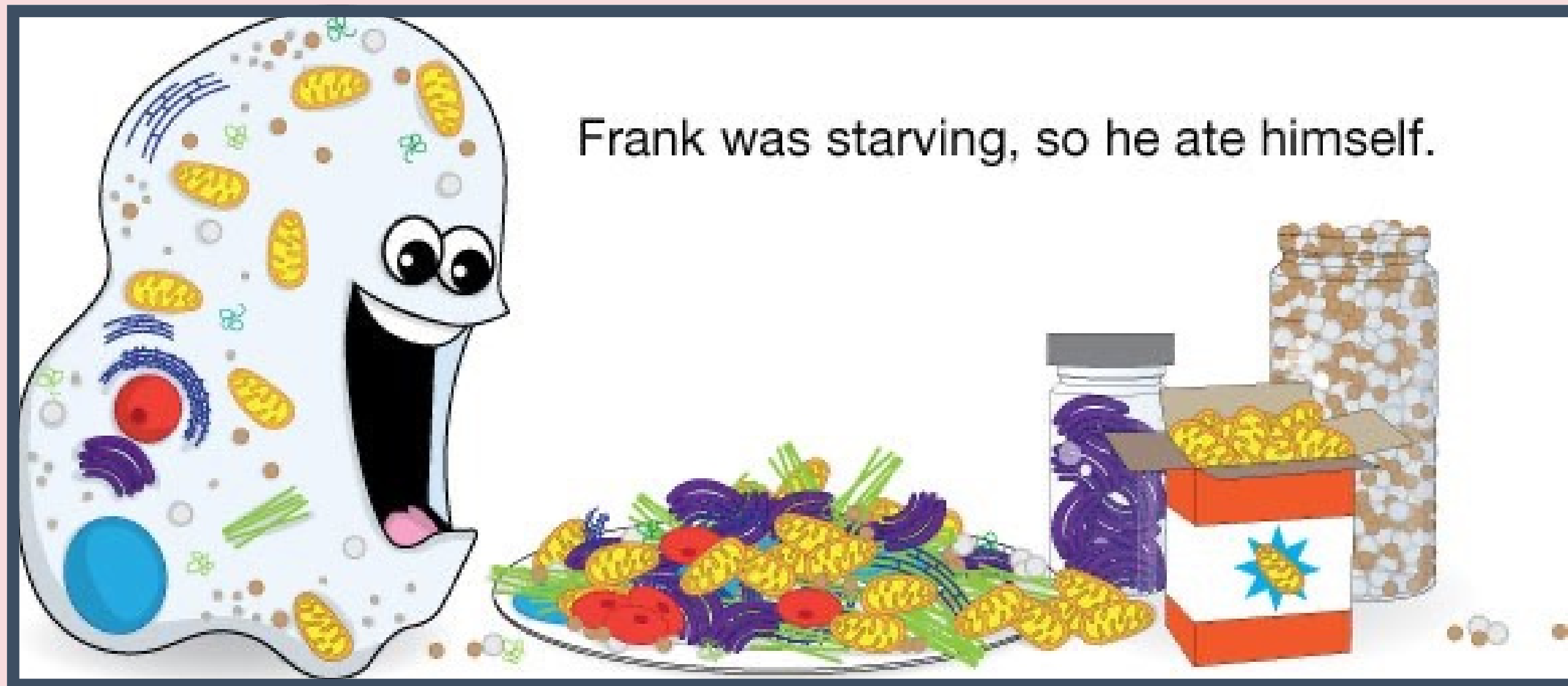
D- Autophagy

---

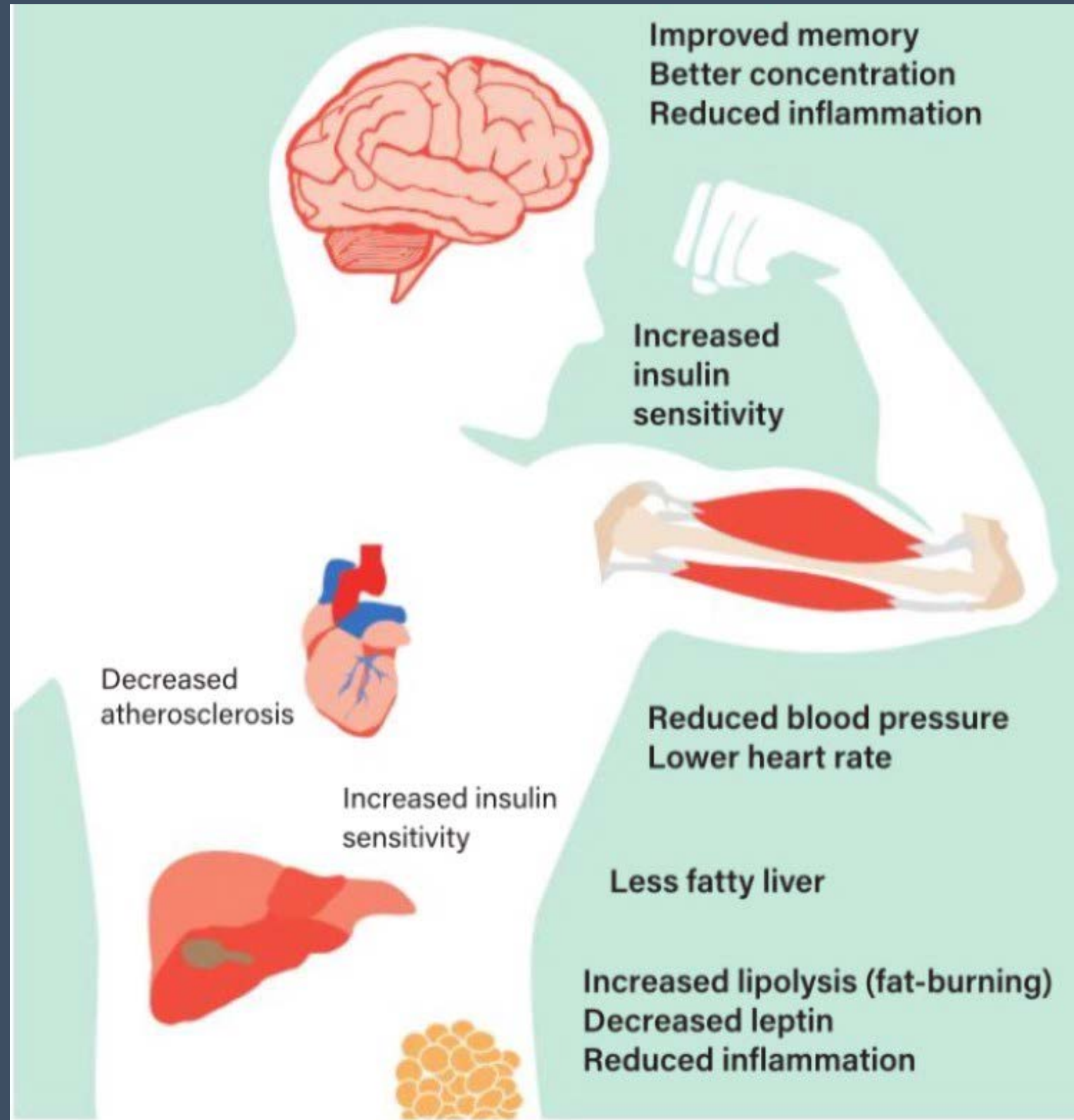


# Answer - Autophagy

Regulated breakdown & recycling of abnormal/damaged cellular components



- Insulin Decreases
- Inflammation Decreases
- Cortisol relatively unaffected
- Electrolytes Remain Stable



# Fasting Physiology

Longo VD, Mattson MP. Fasting: molecular mechanisms and clinical applications. *Cell Metab.* 2014;19(2):181–192.

Stewart WK, Fleming LW. Features of a successful therapeutic fast of 382 days' duration. *Postgrad Med J.* 1973;49(569):203–209.

# What About "Starvation Mode?"

## BIGGEST LOSER STUDY

- BMR decreases in response to caloric reduction
- 93% failure rate after 6 years



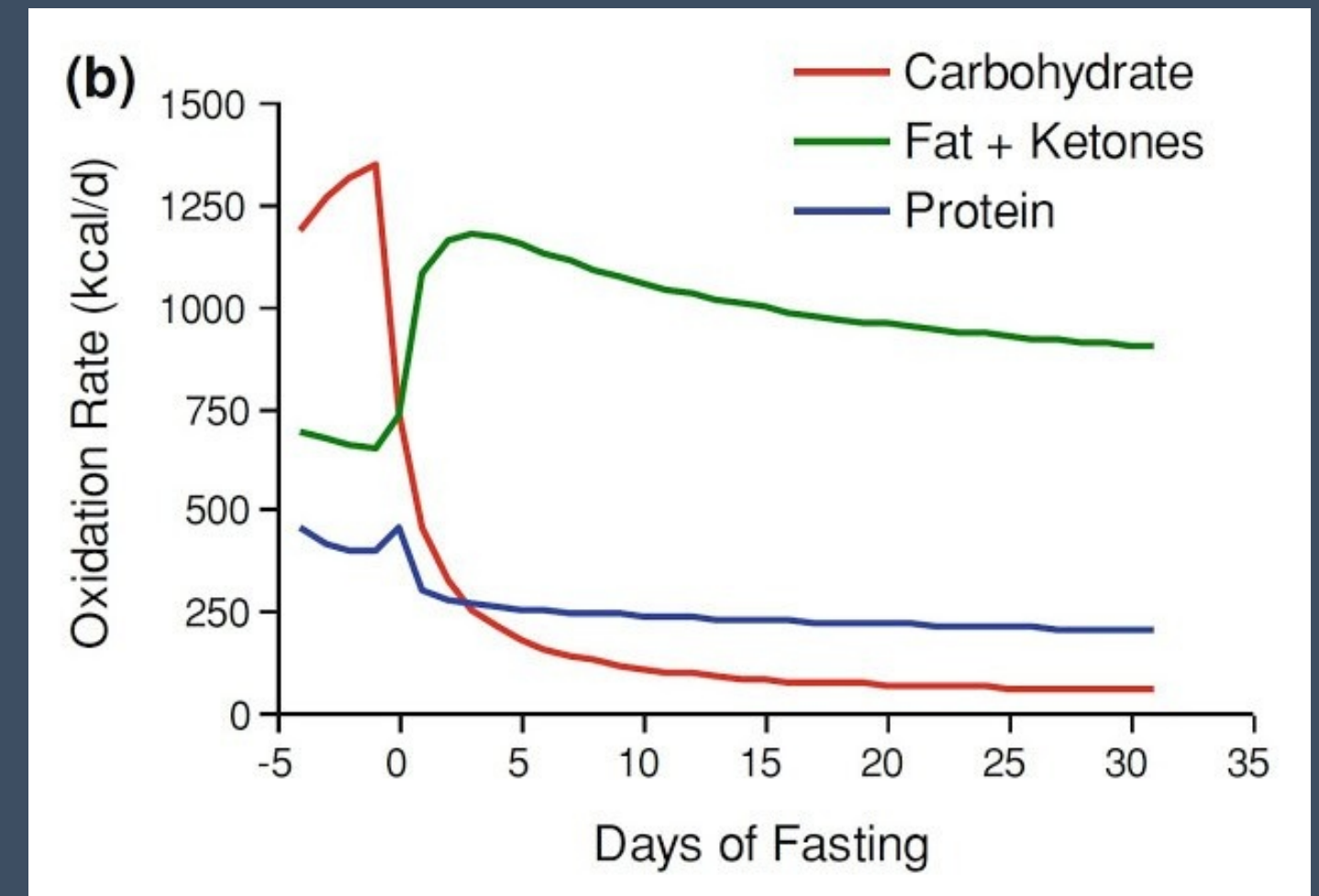
## FASTING DOES NOT REDUCE BMR

- GH & Adrenaline Increase.
  - BMR Preserved/Increases
- Fasting every other day for 22 days resulted in no measurable decrease in BMR
- 4 days of continuous fasting increased BMR by 12 percent

# Won't Fasting Burn Muscle?

## MUSCLE IS PRESERVED DURING A FAST

- Increase in GH
- Decreased urinary nitrogen excretion
- Adaptation of brain to ketone utilization
- Decreased need for hepatic gluconeogenesis



# Who Should Not Fast?

- Underweight
- Severe Malnutrition
- Eating Disorders
- Children
- Pregnancy
- Breastfeeding



# Who Needs Medical Supervision?

- Type 2 DM Medications
- HTN Medications
- Gout
- Thyroid Replacement

Really?

Intermittent

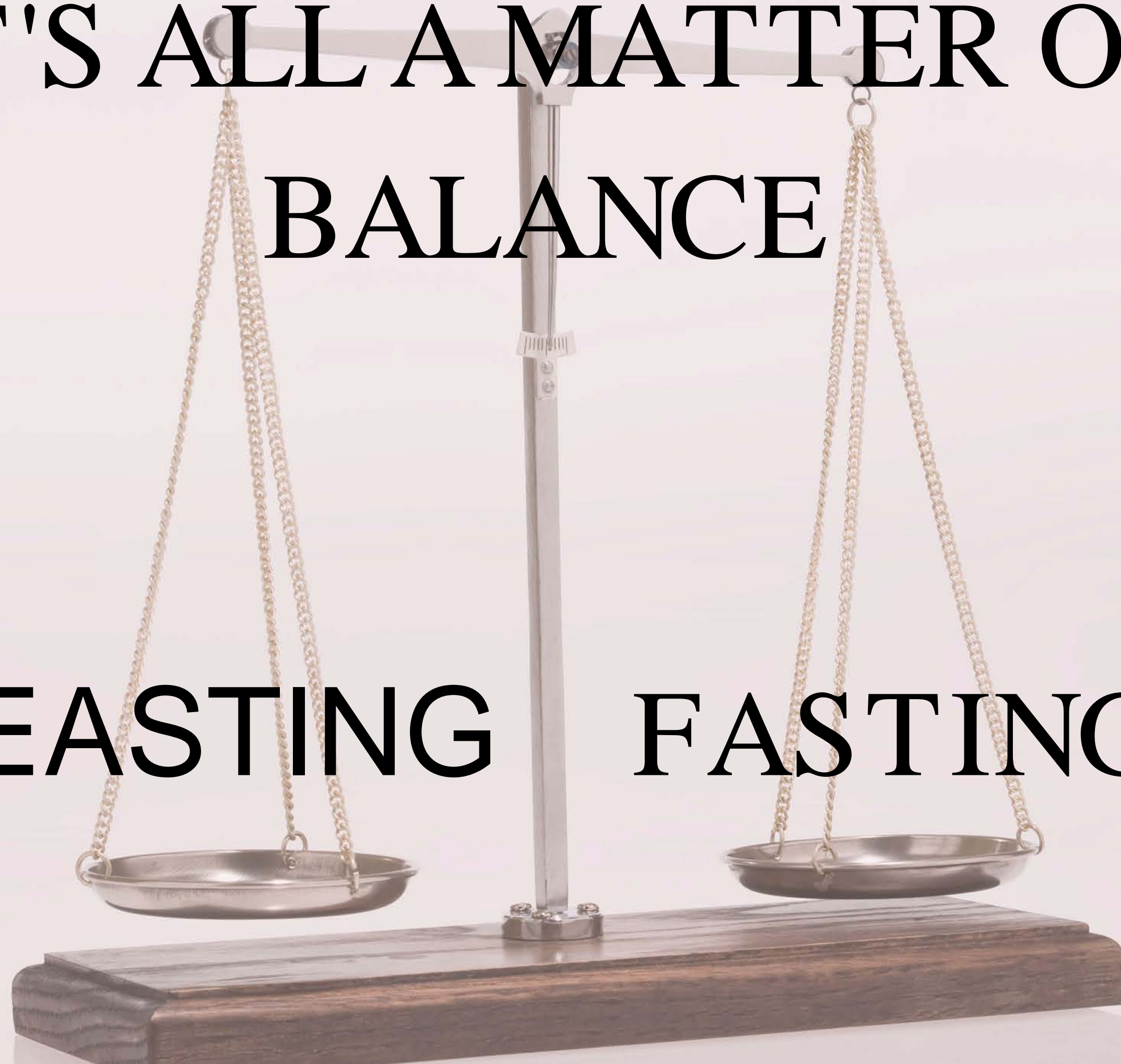
Fasting?



**IT'S ALL A MATTER OF  
BALANCE**

**FEASTING**

**FASTING**



# QUESTION

WHICH OF THE FOLLOWING ABOUT INTERMITTENT FASTING ARE TRUE?

A - IT WILL MAKE YOU TIRED AND UNABLE TO CONCENTRATE

B - IT LEADS TO UNCONTROLLABLE HUNGER

C - IT DEPRIVES THE BODY OF NUTRIENTS

D - ALL OF THE ABOVE

E - NONE OF THE ABOVE





# ANSWER - E - NONE OF THE ABOVE

A - Many people find they have more energy during a fast, probably due to increased adrenaline. Fasting also improves mental clarity and acuity.

B - Hunger comes in waves. As the body becomes accustomed to fasting, appetite actually **DECREASES!**

C - Eat nutrient dense, whole unprocessed foods with less carbohydrates and more natural fat and protein before and after the fast to make up for missed meals. **EATING A HEALTHY DIET IS CRUCIAL.**

---

# Fasting Protocols



MANY DIFFERENT WAYS TO FAST  
NO ONE CORRECT WAY TO DO IT

-

TIME RESTRICTED EATING

SKIPPING ONE MEAL PER DAY

INTERMITTENT FASTING

PROLONGED PERIODS OF  
FASTING



# Time Restricted Eating

---

FIRST STEP FOR THOSE NERVOUS ABOUT FASTING OR FOR THOSE WHO EAT FREQUENTLY



EAT A NUTRIENT-DENSE BREAKFAST, LUNCH AND DINNER TO FEEL FULL/SATISFIED



NO SNACKING, FAST BETWEEN MEALS

ELIMINATE REFINED CARBOHYDRATES/LCHF



MINIMUM 12HOUR OVERNIGHT FAST

---

# Skipping One Meal a Day



SOMETIMES CALLED A 16:8 OR 18:6 DIET

SKIP BREAKFAST OR DINNER TO LENGTHEN  
OVERNIGHT FAST

MOST PEOPLE ELECT TO SKIP BREAKFAST

GOOD FOR DIABETICS DUE TO DAWN  
PHENOMENOM



# Intermittent Fasting Protocols

## 24 HOUR FASTING PROTOCOL

- For patients comfortable with skipping one meal/day
  - Skip breakfast and lunch 3 days/week to start.
  - Eat dinner every day of the week.
  - Can be any 3 days of the week and can be back -to -back.
  - Sometimes called OMAD (one meal/day)
-

## 3 6 HOUR FASTING PROTOCOL

- Missing an entire day of eating
- Fast- eat - fast- eat - fast- eat
- Can be flexible in the fasting days, but not back -to -back



## 4 2 HOUR FASTING PROTOCOL

- Eating days consist of lunch and dinner
- Fasting days are straight through fasting days
- Very effective for treating insulin resistance

# IF Protocols

---

# Prolonged Fasting

- 48 hours: Typically done 1 - 2x/week
- 72 hours: Fast 3 days; eat 4 days
- 5 days: No more than once/month
- 7 days: Not typically recommended



# Selecting the Right Fasting Regimen



Mental Considerations

Lifestyle Considerations

Medical Considerations

Not One-Size-Fits-All





# Medical Considerations

---

IMPROVE = 3X/WEEK; MAINTAIN 1 -2X/WEEK

## TIME RESTRICTED EATING/24 HOURS

- DISEASE PREVENTION
- OBESITY (BODY FAT < 40%)
- PCOS
- BORDERLINE DIABETES/SOME INSULIN RESISTANCE
- DM2, NO MEDS
- STRUGGLING WITH MILD HEALTH CONDITIONS, BUT WOULD BENEFIT FROM FASTING

36 AND 42

HOURS

- OBESITY (BODY FAT >40%)
- DM2, ON MEDS
- >30-40 LB. WEIGHT LOSS NEEDED
- VERY INSULIN RESISTANT PEOPLE
- RELATIVELY HEALTHY PATIENT



---

# Medical Considerations

# What Can Patients Consume on a Fast?

## NUTRITIONAL SUPPLEMENTS

- DAILY MULTIVITAMIN
- SODIUM - 3-7 GRAMS/DAY
- MAGNESIUM CITRATE OR GLYCINATE - 400 MG OD

## WATER (AT LEAST 2 L/DAY)

- STILL
- CARBONATED
- SPARKLING
- MINERAL



## CAN ADD:

- LEMON
- APPLE CIDER VINEGAR
- CHIA SEEDS
- GROUND FLAX SEEDS
- FRUIT - DO NOT EAT

## CAN'T ADD:

- SWEETENED POWDERS OR DROPS (EVEN SUGAR FREE)
- DIET DRINKS

## TEA AND COFFEE

- HOT OR ICED
- UNSWEETENED
- HERBAL



## CAN ADD:

- HEAVY CREAM
- CINNAMON
- LEMON
- BUTTER/GHEE
- COCONUT/MCT OIL

## CAN'T ADD:

- LOW FAT MILK
- COFFEE MATE
- SUGAR
- SWEETENERS

What Can Patients  
Consume on a Fast?

## HOMEMADE SOUP BROTH



## UNSWEETENED PICKLE JUICE/BRINE

### CAN ADD:

- ANIMAL OR FISH BONES
- ABOVE GROUND VEGETABLES
- VINEGAR
- NATURAL SALTS
- PEPPER
- HERBS AND SPICES
- HEAVY CREAM
- COCONUT/OLIVE OIL

### CAN'T ADD:

- BOXED, CANNED, POWDERED BROTHS



# Taking Medications While Fasting

- TAKE 1-2 TABLESPOONS OF CHIA SEED OR PSYLLIUM HUSK IN 1 CUP WATER. SOAK 15 MINUTES THEN DRINK. THEN TAKE MEDS
- COULD ALSO TAKE MEDS WITH 1 CUP OF LEAFY GREENS WITH NO OIL; VINEGAR IS OK



# Potential Side Effects & Remedies

---

## HEADACHES, DIZZINESS AND NAUSEA

- DEHYDRATED - DRINK MORE
- NEED MORE SALT: SEA SALT, KOSHER SALT, CELTIC SALT, HIMALAYAN SALT
- TAKE BROTH WITH SALT

## CONSTIPATION OR DIARRHEA

- ADD GROUND FLAXSEED OR CHIA SEEDS TO FLUIDS ON FASTING DAYS AND ALL FOODS ON EATING DAYS
- ADD MG CITRATE -CONSTIPATION
- SWITCH TO MG GLYCINATE - DIARRHEA



Stop fasting if feeling  
unwell.

Persistent nausea,  
vomiting, dizziness,  
fatigue and lethargy  
are not normal with IF





## **MD Lifestyle Solutions**

**Weight Management, Metabolic & Exercise Medicine**

(204) 233 -9477

[www.mdLifestyleSolutions.com](http://www.mdLifestyleSolutions.com)

[mdLifestyleSolutions@gmail.com](mailto:mdLifestyleSolutions@gmail.com)


Norwood Medical Clinic

Gateway Primacy Clinic

Bison Pembina clinic

# Contact Us

---

- 
- FUNG, J., MOORE, J. (2016) THE COMPLETE GUIDE TO FASTING.HEAL YOUR BODY THROUGH INTERMITTENT, ALTERNATE -DAY AND EXTENDED FASTING.
- FOTHERGILL E, GUO J, HOWARD L, ET AL. PERSISTENT METABOLIC ADAPTATION 6 YEARS AFTER "THE BIGGEST LOSER" COMPETITION. OBESITY(SILVER SPRING). 2016;24(8):1612–1619.
- DUNCAN GG. INTERMITTENT FASTS IN THE CORRECTION AND CONTROL OF INTRACTABLE OBESITY. Trans Am Clin Climatol Assoc. 1962;74:124-129.
- MATTSON MP, LONGO VD, HARVIE M. IMPACT OF INTERMITTENT FASTING ON HEALTH AND DISEASE PROCESSES. AGEING RES REV. 2017;39:4658.
- LONGO VD, MATTSON MP. FASTING: MOLECULAR MECHANISMS AND CLINICAL APPLICATIONS. CELL METAB. 2014;19(2):184-192.
- EFFECTS OF INTERMITTENT FASTING ON HEALTH, AGING, AND DISEASE, RAFAEL DE CABO, PH.D., ANDMARK P. MATTSON, PH.D. N ENGL J MED 2019;381:2541-51.
- STEWART WK, FLEMING LW. FEATURES OF A SUCCESSFUL THERAPEUTIC FAST OF 382 DAYS' DURATION. POSTGRAD MED J. 1973;49(569):203-209.

# References

---

# Recommended Resources

<https://thefastingmethod.com/the-science/>

<https://www.dietdoctor.com>

<https://www.lowcarbusa.org/wp-content/uploads/2019/12/Clinical-Guidelines-General-Intervention-v1.3.6.pdf>

Effects of Intermittent Fasting on Health, Aging, and Disease, Rafael de Cabo, Ph.D., and Mark P. Mattson, Ph.D. *N Engl J Med* 2019;381:2541-51.

---