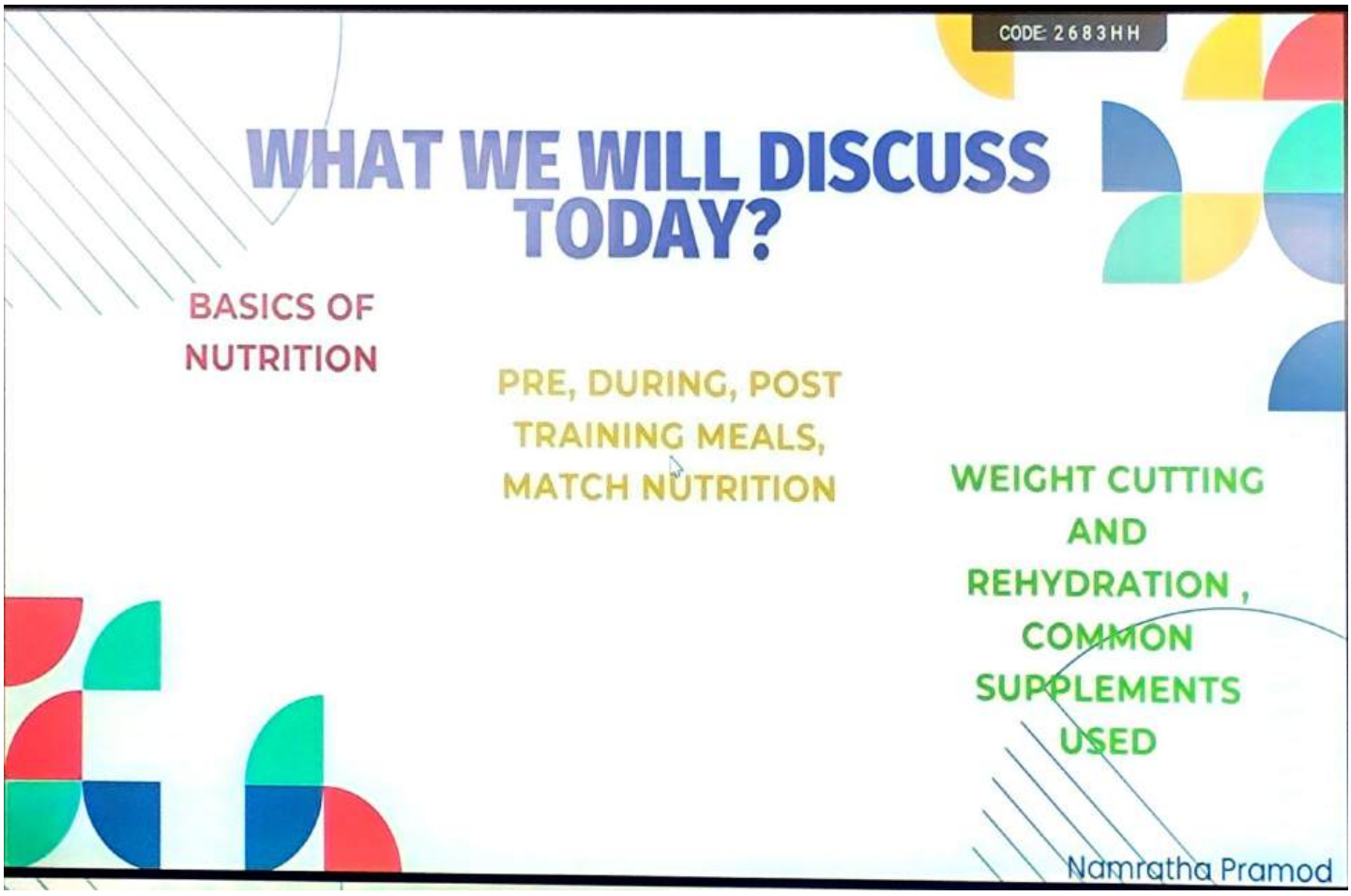
CODE: 2683HH

OPTIMIUM NUTRITION STRATEGIES FOR KICKBOXING PERFORMANCE

Namratha Pramod


CODE: 2683HH
WHAT WE WILL DISCUSS TODAY?
BASICS OF NUTRITION
PRE, DURING, POST TRAINING MEALS, MATCH NUTRITION
WEIGHT CUTTING AND REHYDRATION , COMMON SUPPLEMENTS USED
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INTRODUCING OPTIMUM NUTRITION

Nutrition: The process of obtaining the food necessary for health and growth

OPTIMAL Nutrition: Eating the right amounts of nutrients on a proper schedule to achieve the best performance and longest possible lifetime in good health.

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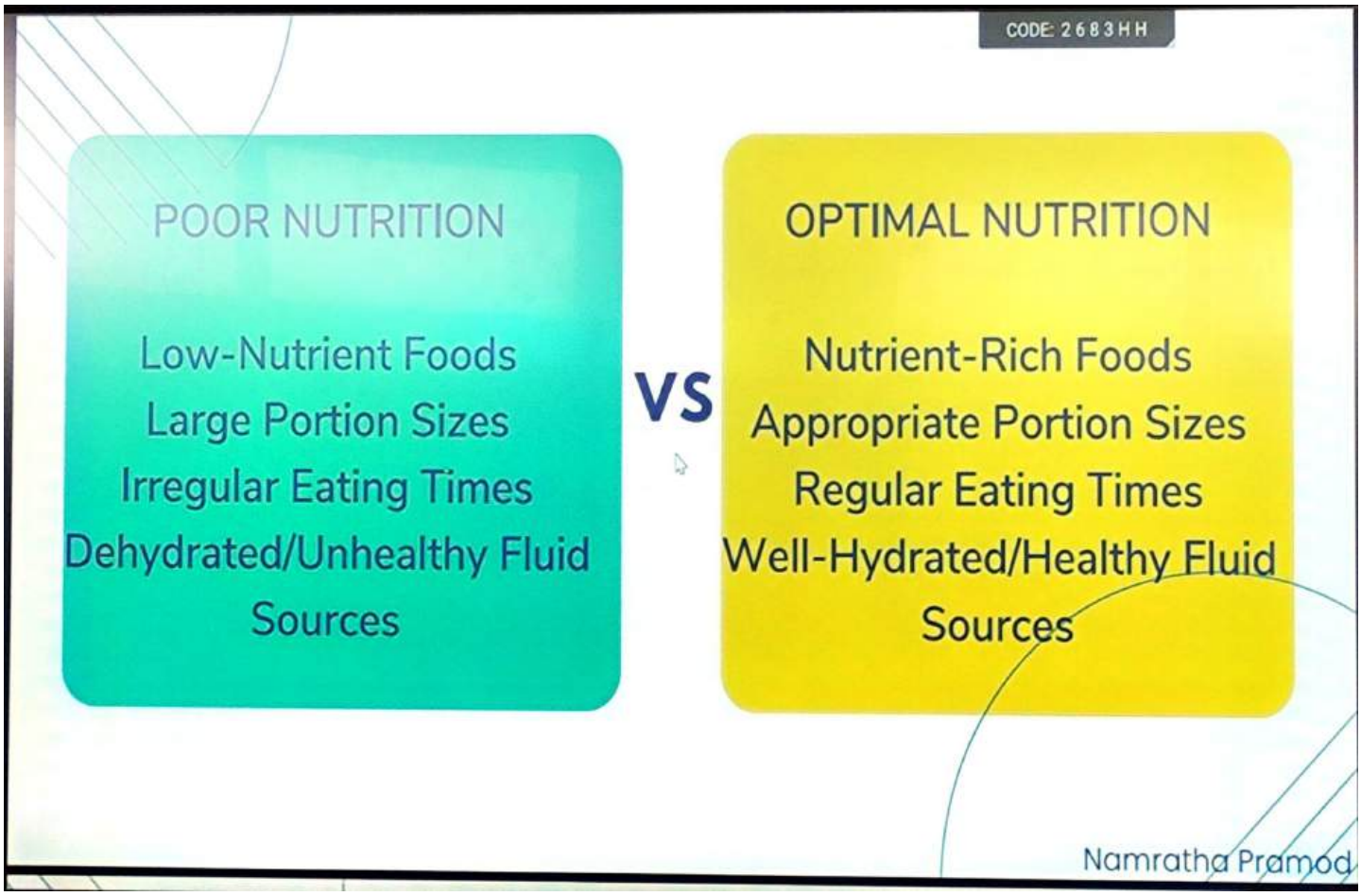
CODE: 2683HH
POOR NUTRITION
Low-Nutrient Foods
Large Portion Sizes
Irregular Eating Times
Dehydrated/Unhealthy Fluid Sources
VS
OPTIMAL NUTRITION
Nutrient-Rich Foods
Appropriate Portion Sizes
Regular Eating Times
Well-Hydrated/Healthy Fluid Sources
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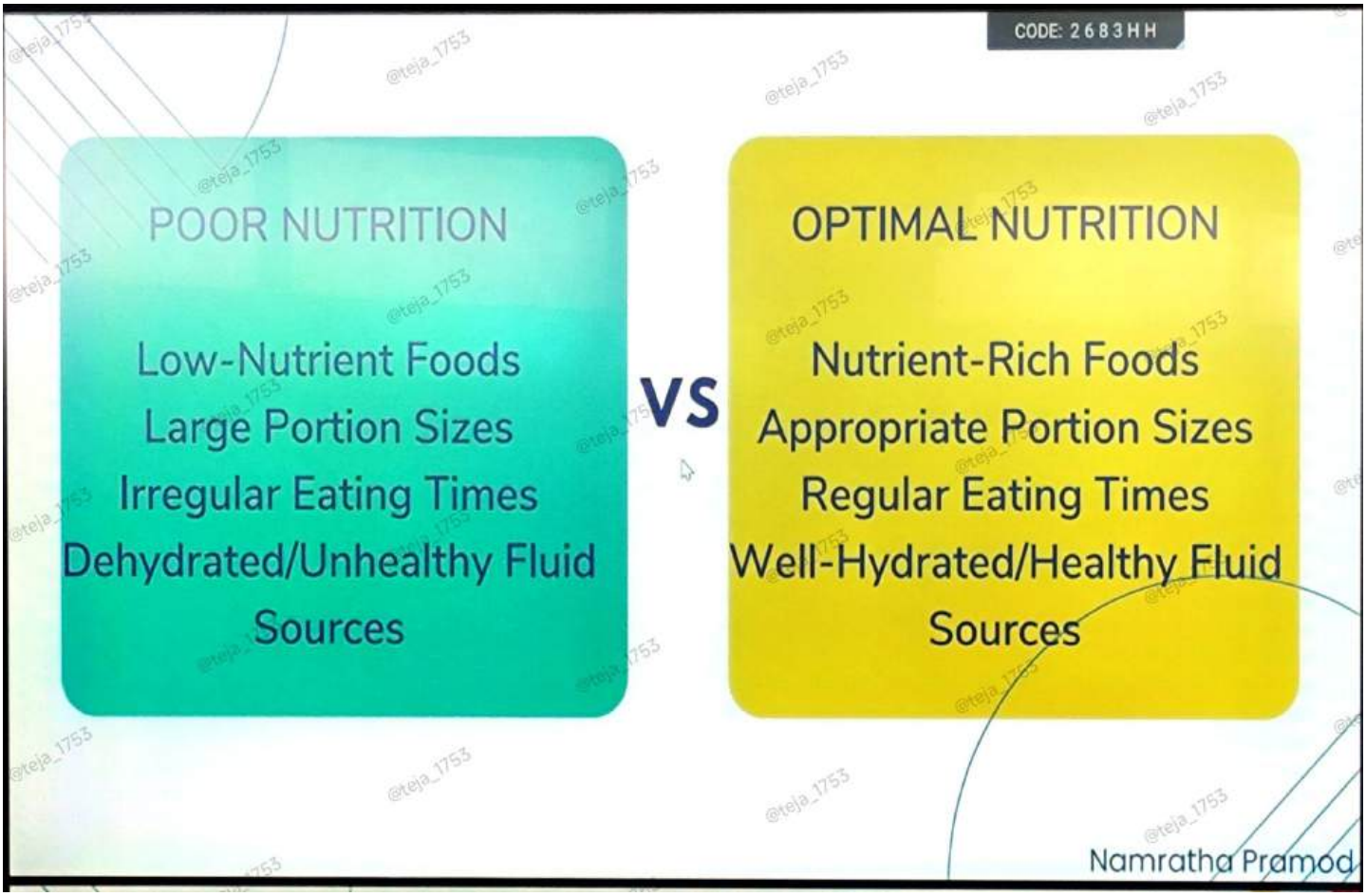
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POOR NUTRITION
Low-Nutrient Foods
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Appropriate Portion Sizes
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Well-Hydrated/Healthy Fluid Sources
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WHAT INFLUENCES ATHLETIC ABILITY?

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CONSEQUENCES OF POOR NUTRITION

- Increased risk of fatigue, injury, and illness
- Loss of muscle mass
- Menstrual dysfunction
- Loss of, or failure to gain bone density
- Prolonged recovery
- Potential long-term consequences

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CONSEQUENCES OF PROPER NUTRITION

- Sufficient energy
- Desired body composition
- Optimum performance
- Promote rapid recovery & regeneration
- Faster & better injury repair
- Improved motor skills
- Disease prevention
- Overall health and wellness

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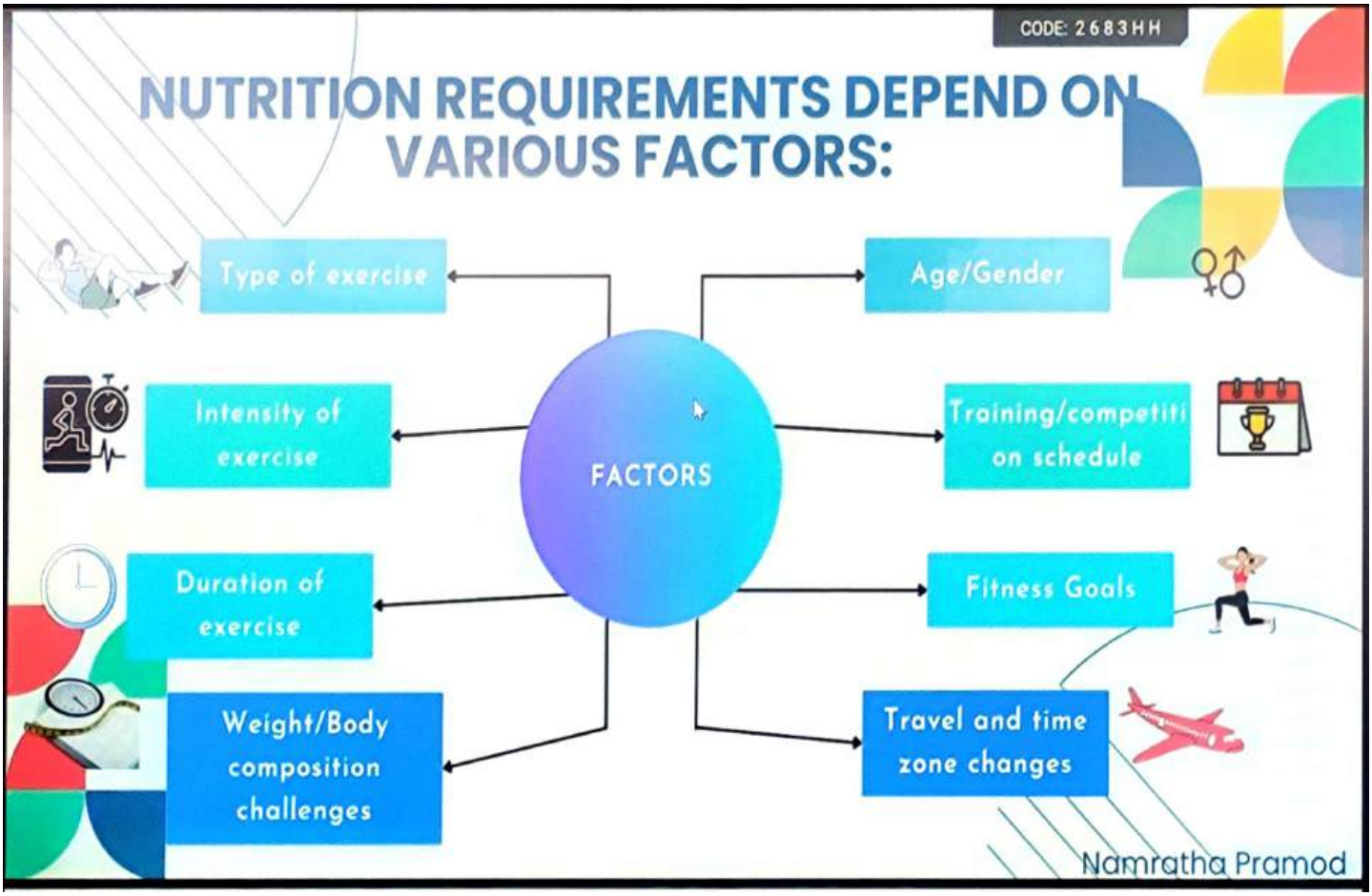
NUTRITION REQUIREMENTS DEPEND ON VARIOUS FACTORS:



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KINDS OF FUEL TO OUR BODY

HUMAN ENGINE

FAT = Endurance Fuel

CARB = High Intensity Fuel

PCr = Fast Accelerations

PROTEIN = Last Source Sports

CAR ENGINE

One Kind of Fuel

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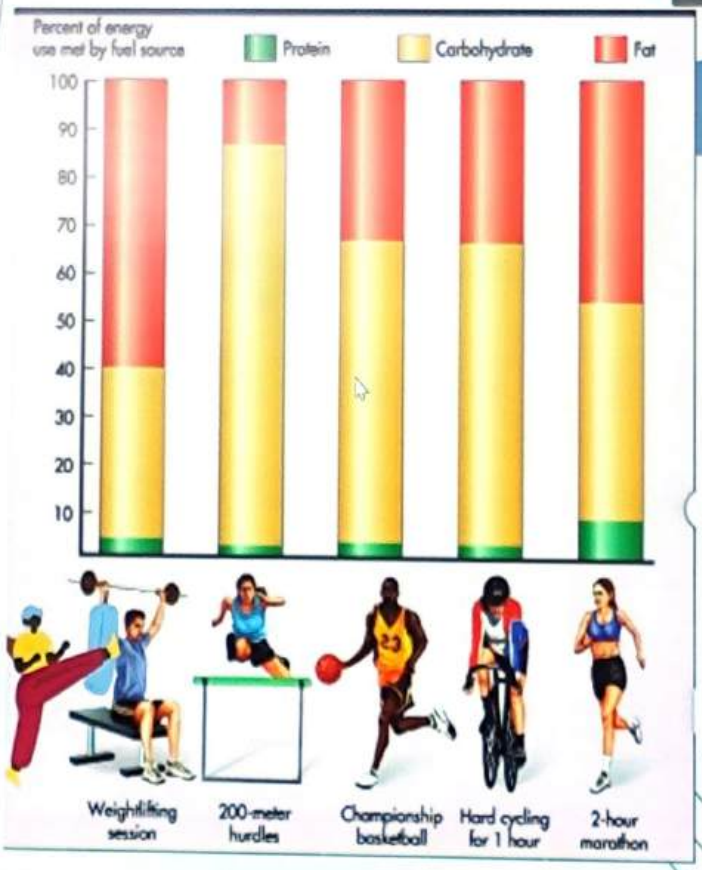

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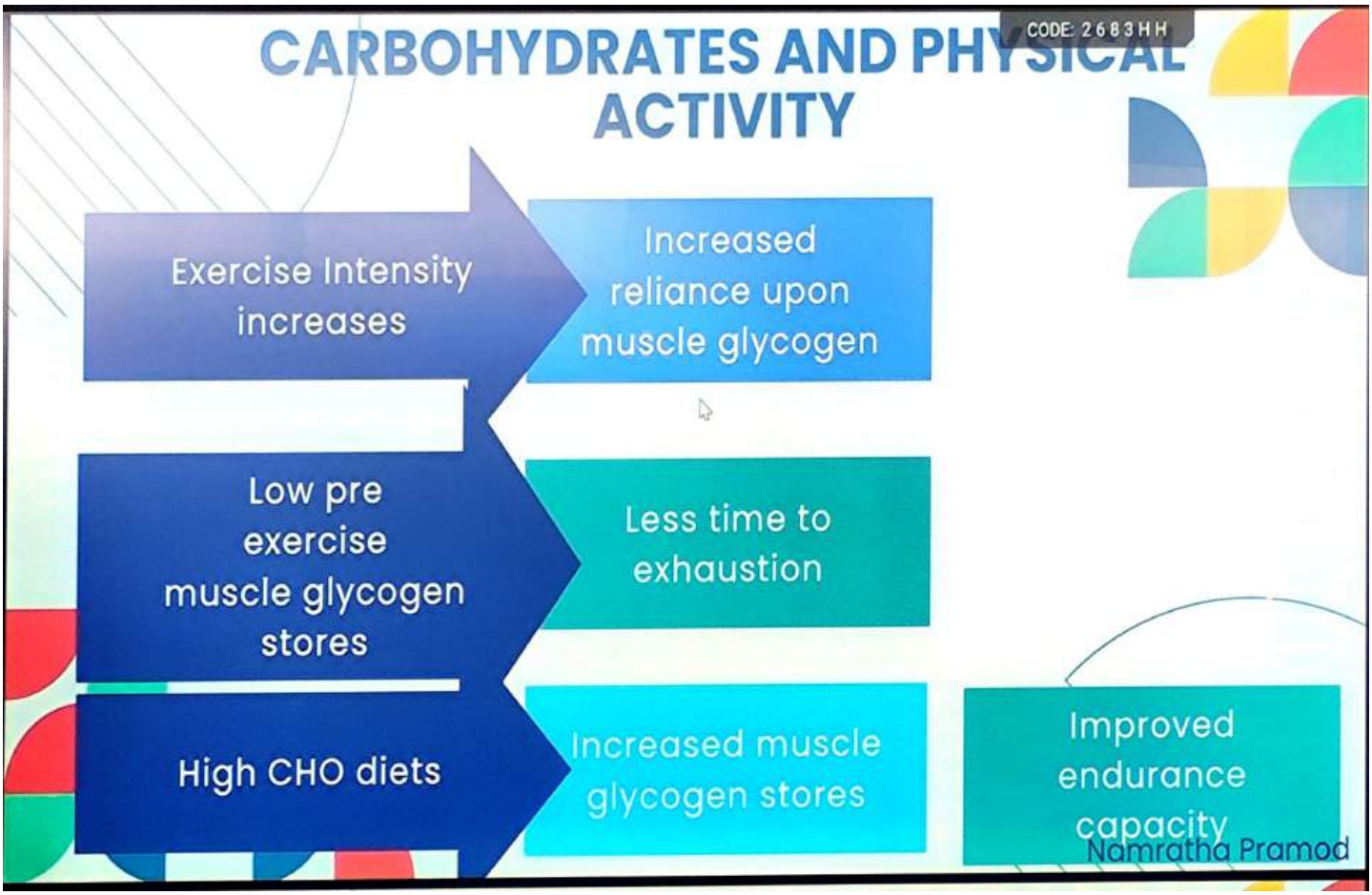
CODE: 2683HH
CARBOHYDRATES AND PHYSICAL ACTIVITY
Exercise Intensity increases
Increased reliance upon muscle glycogen
Low pre exercise muscle glycogen stores
Less time to exhaustion
High CHO diets
Increased muscle glycogen stores
Improved endurance capacity
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LIMITED STORAGE OF CARBOHYDRATES

Liver:
90gms of Glycogen
(storage form of carbohydrates)

Skeletal Muscles:
350gms of Glycogen
(storage form of carbohydrates)

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PROTEIN : DO YOU REALLY NEED EXTRA?

- Muscle hypertrophy
- Hormone synthesis,
- Immune function,
- Energy,
- Muscle repair,
- Prevention of injury

Approximately
10-35 of the total energy should come from protein, depending on the actual energy intake

The requirement for protein can be met through a well balanced diet.

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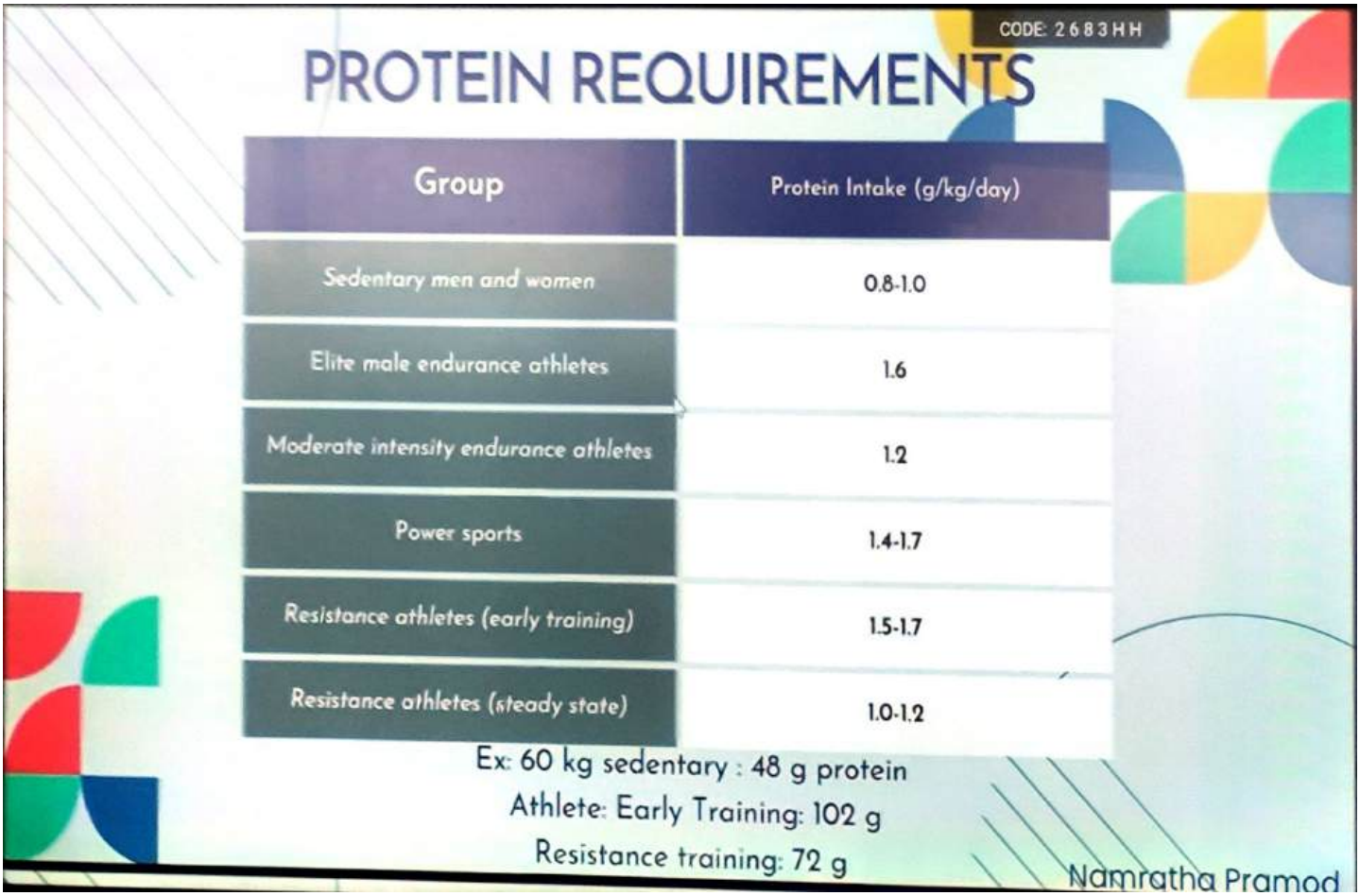
CODE: 2 6 8 3 H H
PROTEIN REQUIREMENTS
Group
Protein Intake (g/kg/day)
Sedentary men and women
0.8-1.0
Elite male endurance athletes
1.6
Moderate intensity endurance athletes
1.2
Power sports
1.4-1.7
Resistance athletes (early training)
1.5-1.7
Resistance athletes (steady state)
1.0-1.2
Ex: 60 kg sedentary : 48 g protein
Athlete: Early Training: 102 g
Resistance training: 72 g
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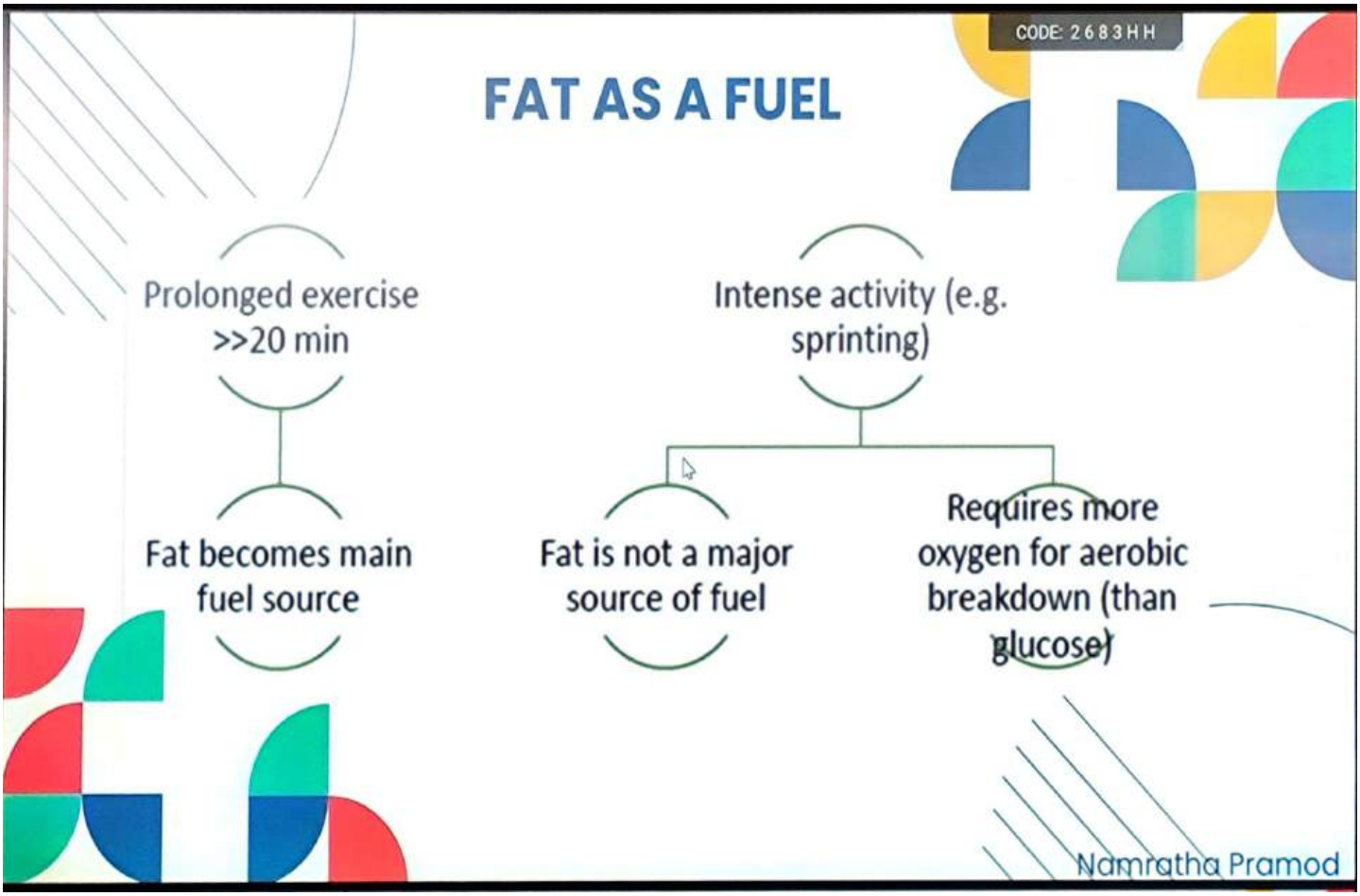
CODE: 2683HH
FAT AS A FUEL
Prolonged exercise >>20 min
Fat becomes main fuel source
Intense activity (e.g. sprinting)
Fat is not a major source of fuel
Requires more oxygen for aerobic breakdown (than glucose)
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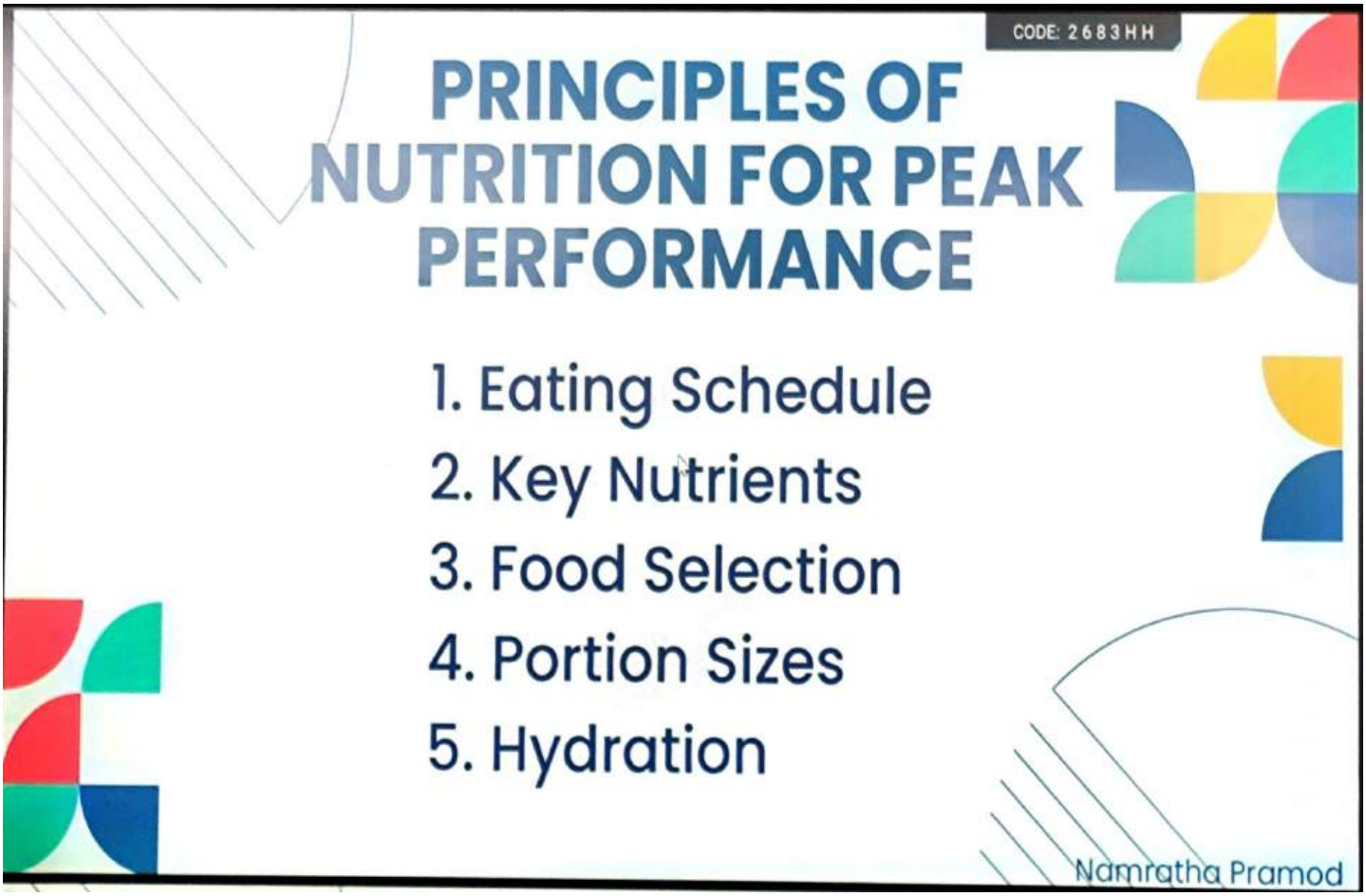
CODE: 2683HH
PRINCIPLES OF NUTRITION FOR PEAK PERFORMANCE
1. Eating Schedule
2. Key Nutrients
3. Food Selection
4. Portion Sizes
5. Hydration
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EATING SCHEDULE

Post Training/Event Fueling

During Training/Event Fueling

Pre Training/Event Fueling

Main Fueling Plan

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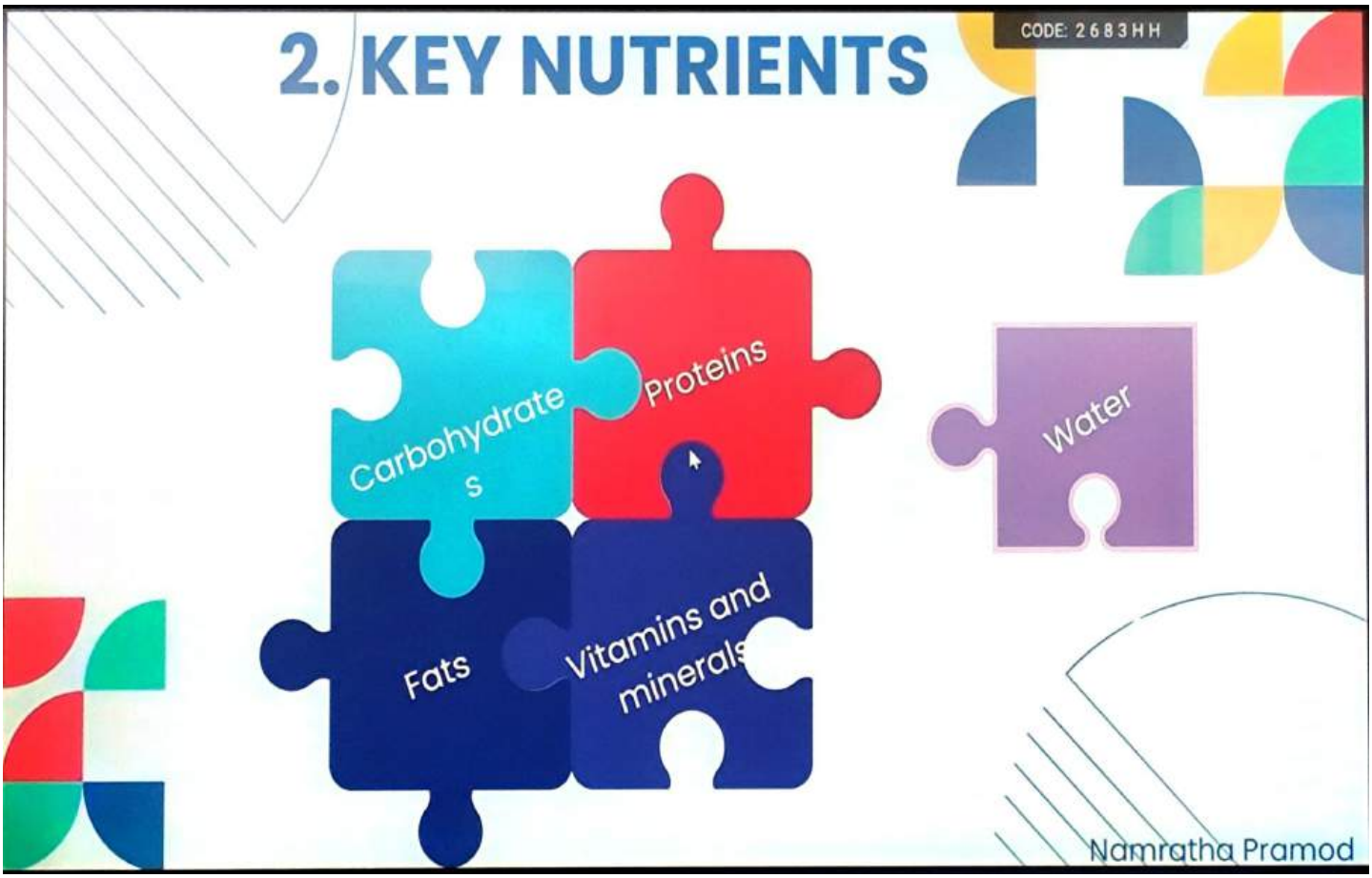
2. KEY NUTRIENTS
CODE: 2683HH
Carbohydrates
Proteins
Water
Fats
Vitamins and minerals
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CODE: 2683HH
THE INTERNATIONAL OLYMPIC COMMITTEE STATES
The Amount
The Composition
The Timing
Affects Sport Performance
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3. FOOD SELECTION

Why Athletes Should Care About Gut Bacteria

- Better insulin sensitivity
- Less oxidative stress
- Less inflammation
- More endurance
- Reduced anxiety
- Improve energy expenditure
- Quicker recovery

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4. PORTION SIZES

ATHLETE MEAL PLATES

US Olympic Committee's (USOC)

Easy Training

Moderate Training

Heavy Training

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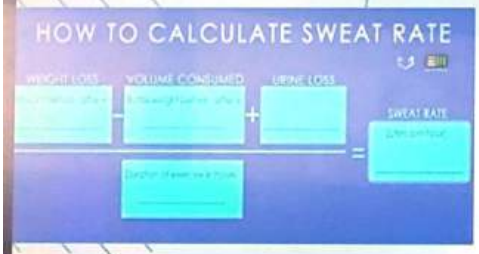
5. HYDRATION



1 to 3: Hydrated

Pale, odourless and plentiful urine is often an indication that you are well hydrated.
Keep drinking at the same rate.

4 to 6: Mildly dehydrated

Slightly darker yellow urine can indicate that you need to drink more water.
Drink a glass of water now.

7 to 8: Dehydrated

Even darker yellow urine is often an indication that you are dehydrated.
Drink 2-3 glasses of water now.

wearable sweat rate sensor

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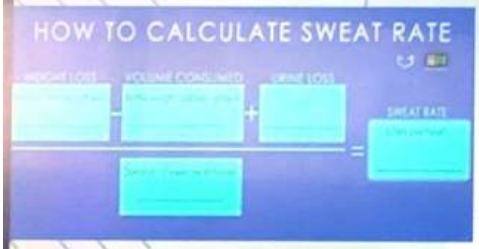
CODE: 2683HH

5. HYDRATION



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Pale, odourless and plentiful urine is often an indication that you are well hydrated.
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Even darker yellow urine is often an indication that you are dehydrated.
Drink 2-3 glasses of water now.

wearable sweat rate sensor

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5. HYDRATION

Some more math again

Body weight(Kg) x 30 ml = Water to be consumed per day.

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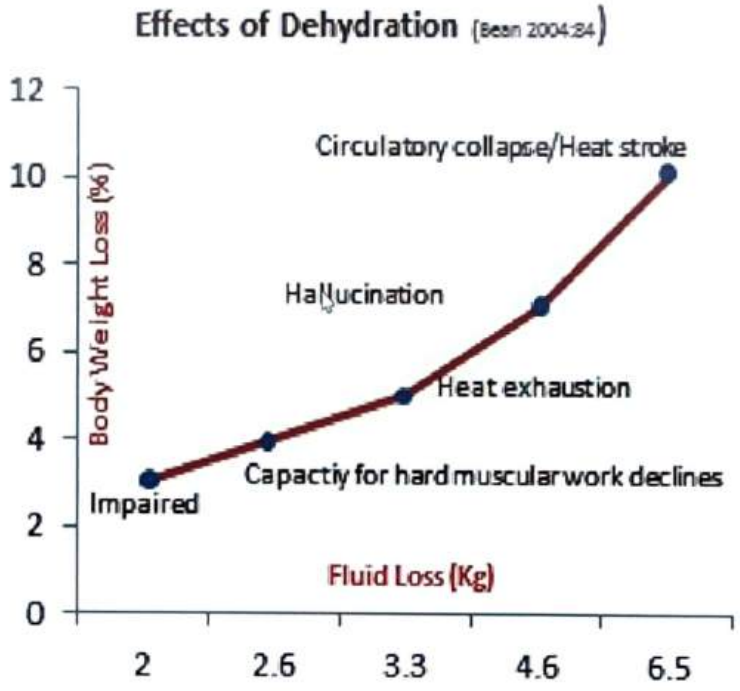
EFFECTS OF DEHYDRATION



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BENEFITS OF PRE EXERCISE SNACK

- Prevent Hypoglycemia
- Ward off hunger
- Fuel your muscles with CHO(converts to glycogen in advance)
- Fuel your brain (CHO enters blood stream)
- Give peace of mind that you are well fuelled.

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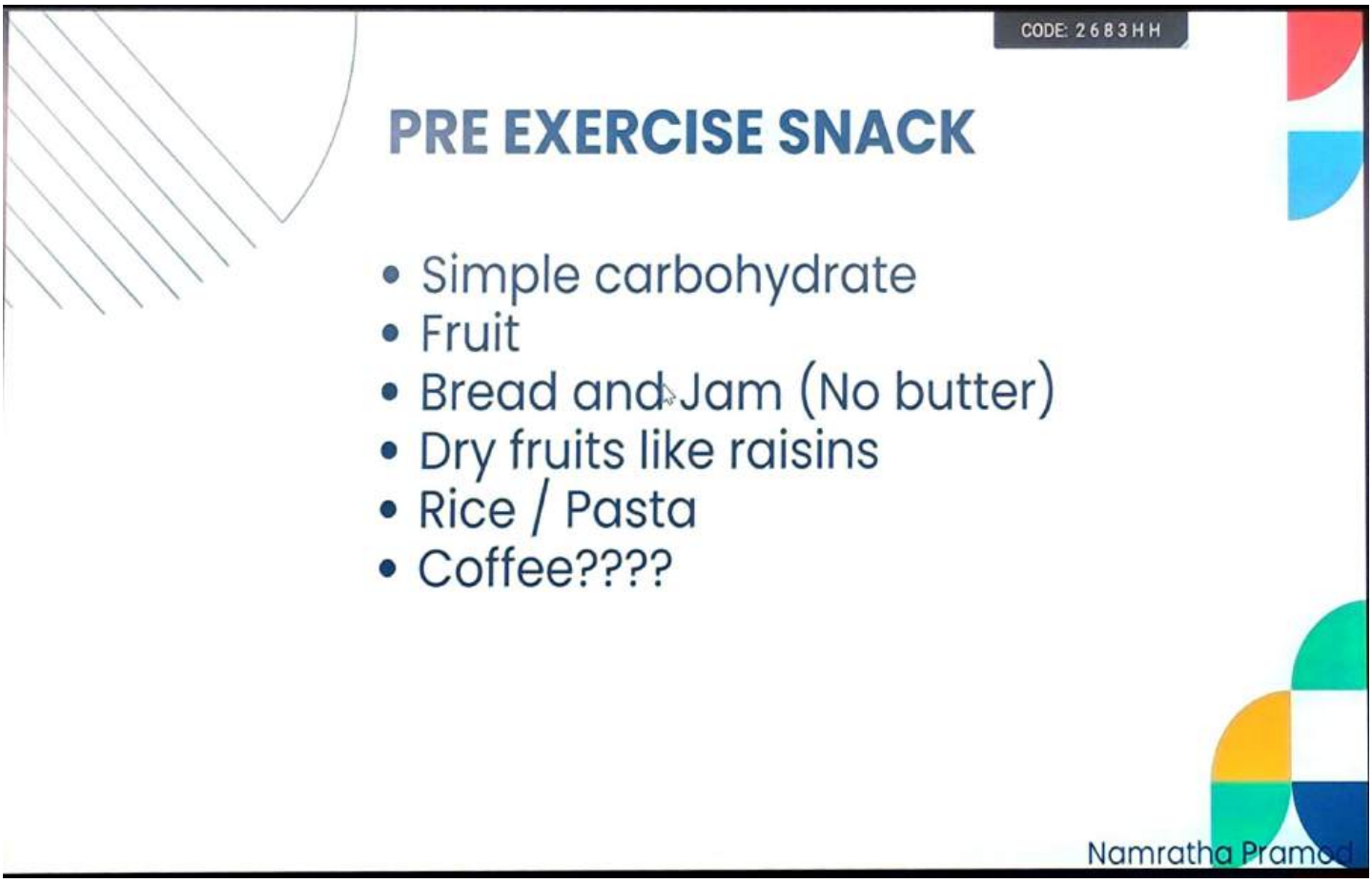
CODE: 2683HH
PRE EXERCISE SNACK
• Simple carbohydrate
• Fruit
• Bread and Jam (No butter)
• Dry fruits like raisins
• Rice / Pasta
• Coffee????
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BENEFIT OF DURING TRAINING/COMPETITION SNACK

- Provide fuel early and often for better performance and recovery.
- Prevent dehydration by fluids.
- If the duration is of rest is 1 min, carbohydrate drinks/mouth rinse help in fuelling and faster absorption.

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DURING TRAINING/COMPETITION SNACK

it is not reasonable to assume that the trainee will be able to take a snack break.

Therefore, should periodically sip small amounts of water or sports beverage between event throughout.

Choices (~6–8% carbohydrate)

- Lemon juice with salt and sugar
- Glucose/Honey rinse
- Electrolytes/ Sports Drinks

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WHY CARBOHYDRATE RINSE WORKS?

The carbohydrate receptors in the mouth activate the central nervous system, improving:

- Power output
- Reaction time
- Perceived effort

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BENEFIT OF POST TRAINING/COMPETITION SNACK

- Replace muscle glycogen.
- Replace losses.
- Increase muscle protein synthesis

Ideally, a small snack or a meal is to be consumed within 15-30 mins after the competition.

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POST TRAINING/COMPETITION SNACK

Immediate consumption:

- Fruit milkshakes
- Carbohydrate dense snacks like chikki
- Whey protein fruit shakes
- Adequate fluids.
- Sports Drinks

Later

Meals rich in carbohydrate and protein.

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HOW A DIET PLAN CAN LOOK LIKE

Pre Training: Water and fruit
During training: Lemon water/juice
Post training: Nuts and dry fruits

Breakfast : Cereals - Indian breakfast, bread, cornflakes & accompaniments
Fruits, Fresh juice, Milk, Eggs or Paneer.

Mid morning: Fruit/ sandwich

Lunch: Cereals - Wheat, Ragi, Brown rice, rice, millets
Pulses - Dal, Rajma, Channa, sambar
3 serving of vegetables - Salads, Sabzi, steamed vegetables
Non veg or paneer or eggs
Curd, buttermilk, lassi

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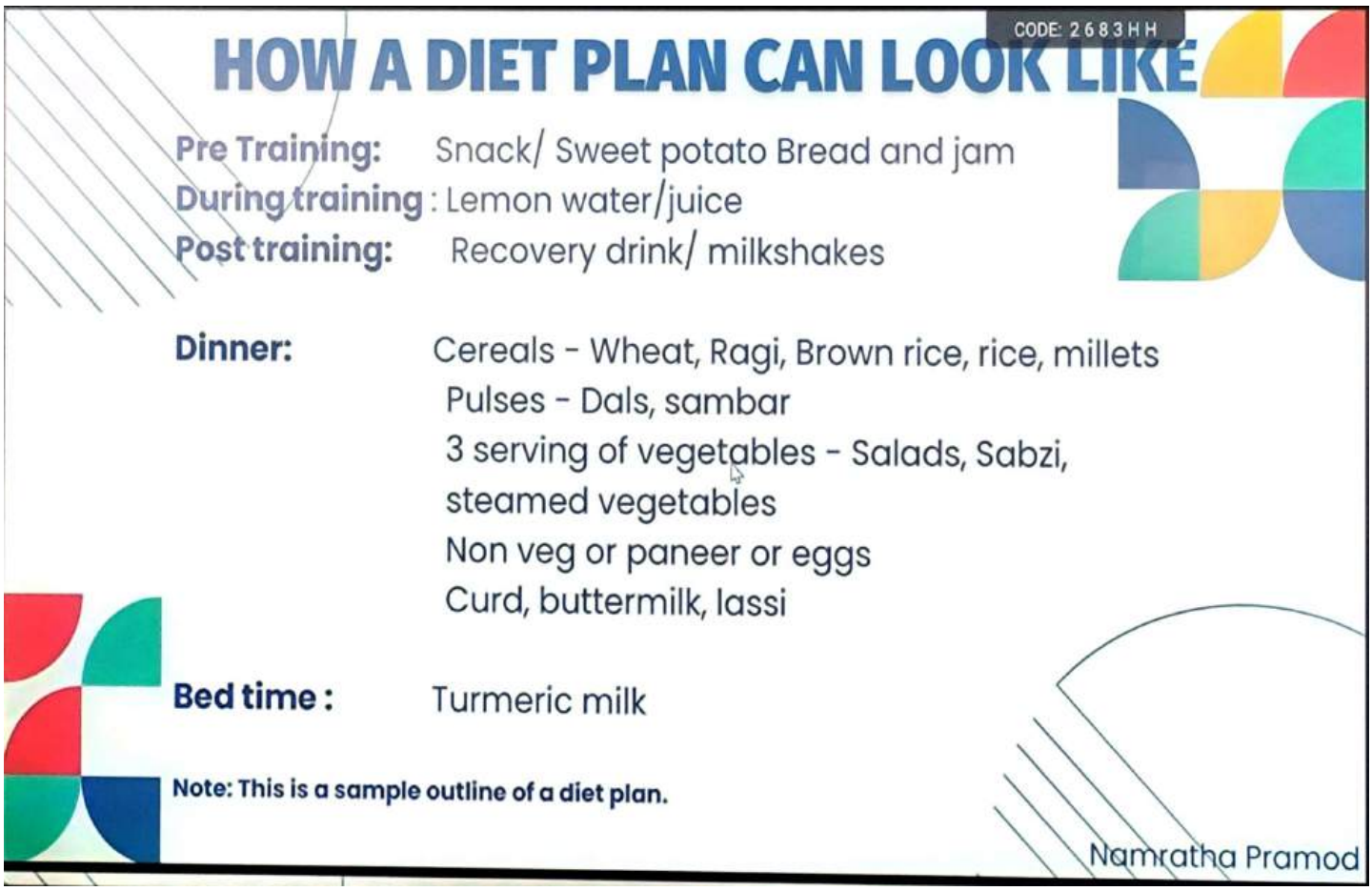
CODE: 2683HH
HOW A DIET PLAN CAN LOOK LIKE
Pre Training: Snack/ Sweet potato Bread and jam
During training : Lemon water/juice
Post training: Recovery drink/ milkshakes
Dinner: Cereals - Wheat, Ragi, Brown rice, rice, millets
Pulses - Dals, sambar
3 serving of vegetables - Salads, Sabzi, steamed vegetables
Non veg or paneer or eggs
Curd, buttermilk, lassi
Bed time : Turmeric milk
Note: This is a sample outline of a diet plan.
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THE DAY BEFORE THE MATCH

Goal: Optimize glycogen stores & hydration

Meal composition:

- Focus on carbohydrate-rich meals (6–8 g/kg body weight/day)
- Include lean protein & low-fat options
- Limit high-fiber and spicy foods to avoid stomach discomfort

Hydration:

Drink 2.5–3 L water/day
Add electrolytes if sweating heavily

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MATCH DAY MORNING (3–4 HOURS BEFORE THE BOUT)

Goal: Fuel with easily digestible energy and maintain hydration

Meal Composition:

- High in carbohydrates (1–4 g/kg)
- Moderate protein, low fat & fiber

Hydration:

- 400–600 mL of water/electrolyte drink

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60–90 MINUTES BEFORE MATCH

Goal: Top-up energy & prevent hunger during fight

Snack Options:

- Banana / Dates / Energy bar
- Small portion of white bread + jam
- Sports drink (carb-electrolyte mix)

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DURING THE MATCH

Goal: Maintain hydration & blood glucose

In multiple bouts or long event day:

- Optional: sports drink, gel, or fruit juice
- Sip 150–250 mL sports drink or water every 15–20 min

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IMMEDIATELY POST-MATCH (0–30 MINUTES)

Goal: Rapid recovery of glycogen, fluids, and electrolytes

Recovery ratio: 3:1 (Carbs : Protein)

- **Choices:**
  - Chocolate milk or recovery shake
  - Fruit smoothie with whey + banana
  - Yogurt + granola + fruit

Hydration: Replace 150% of fluid lost (weigh before & after match to estimate)

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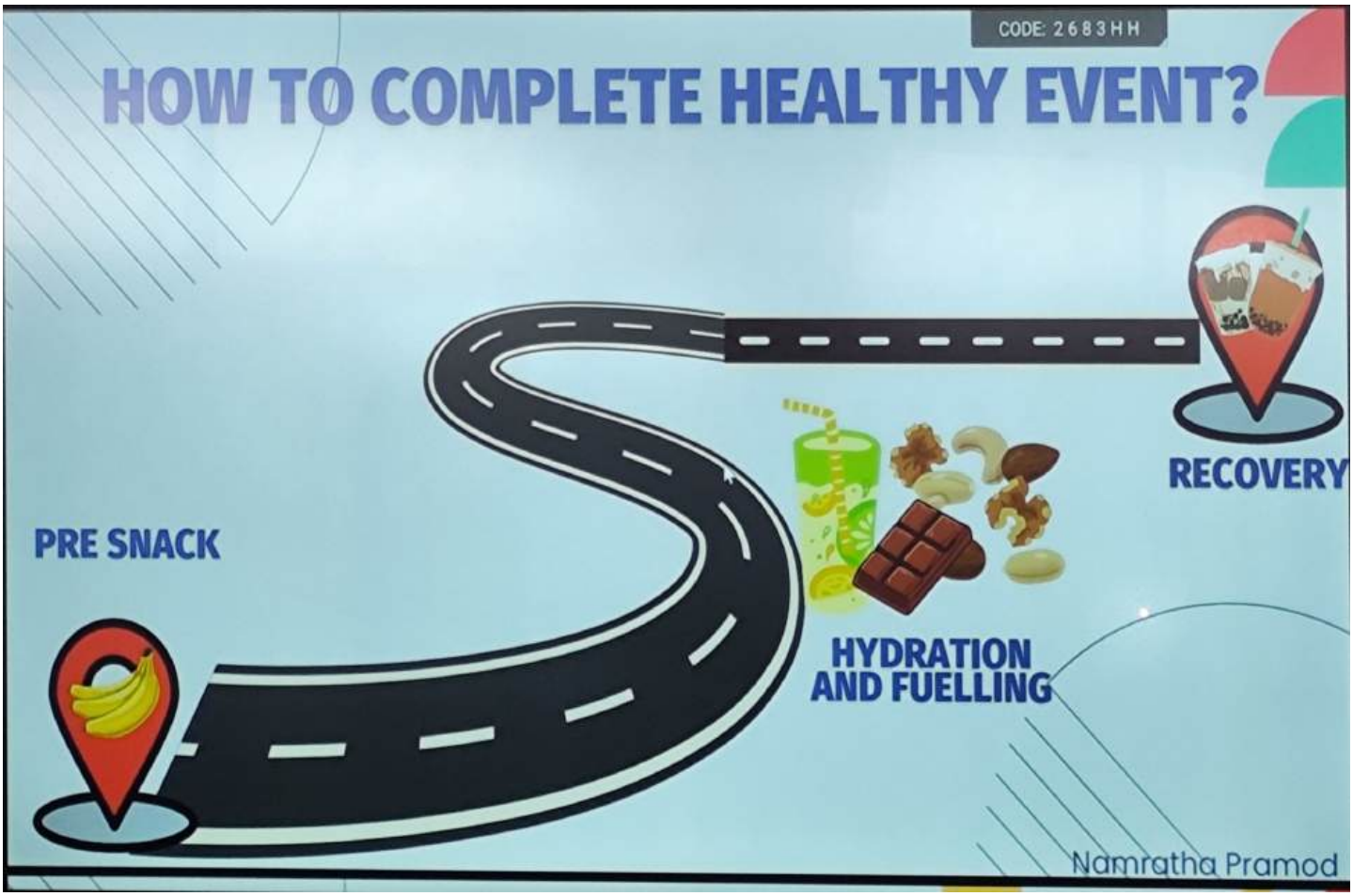
CODE: 2683HH
HOW TO COMPLETE HEALTHY EVENT?
RECOVERY
PRE SNACK
HYDRATION
AND FUELLING
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CODE: 2 6 8 3 H H
SAFE WEIGHT MANAGEMENT &
REHYDRATION STRATEGIES
COMMON SUPPLEMENTS USED


CODE: 2683HH
HABITS TO DEVELOP
HABIT #1
A Right eating pattern
HABIT #2
Sound Sleep
HABIT #3
Adequate training
HABIT #4
Required rest and recovery
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CODE: 2 6 8 3 H H

2–3 HOURS AFTER MATCH

Goal: Full meal for repair & recovery

Balanced meal with:

- Complex carbs (rice, roti, potato)
- Lean protein (chicken, fish, paneer, tofu)
- Vegetables & fats (butter, ghee)

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UNDERSTANDING "MAKING WEIGHT"
Kickboxers often need to meet strict weight categories before competition (usually 24–36 hrs before fight).
The goal: Reach target weight safely without compromising strength, focus, or recovery.
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LONG-TERM WEIGHT MANAGEMENT (4–6 WEEKS BEFORE MATCH)
Goal: Gradual fat loss, not dehydration.
✅ Reduce total body fat slowly — aim for 0.5–1% body weight loss per week.
✅ Maintain high protein intake (1.6–2.2 g/kg) to preserve muscle.
✅ Emphasize complex carbs, lean protein, vegetables, and hydration.
✅ Avoid crash diets — they reduce glycogen, performance, and immune strength.
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SHORT-TERM "CUT" (LAST 5–7 DAYS BEFORE WEIGH-IN)
Used only when athletes are close to target weight and supervised by a sports dietitian or coach.
Techniques:
• Slight carb taper (reduces glycogen + water bound to it)
• Lower sodium intake for a few days to reduce fluid retention
• Maintain moderate training intensity
• Use water-loading method (carefully): increase water early in the week, then taper 1–2 days before weigh-in
• No long sauna or extreme dehydration — dangerous and performance-impairing
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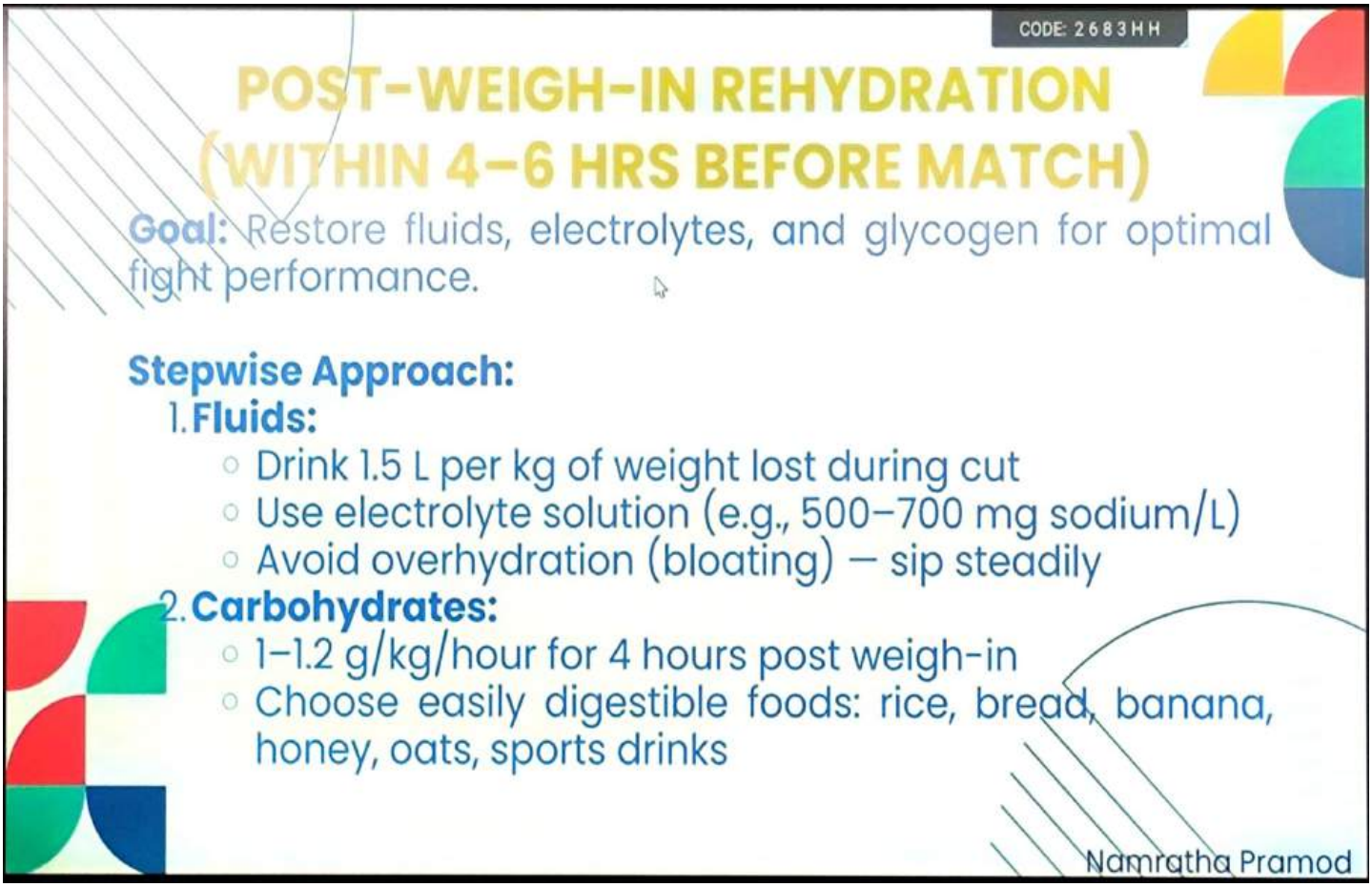
CODE: 2683HH
POST-WEIGH-IN REHYDRATION
(WITHIN 4–6 HRS BEFORE MATCH)
Goal: Restore fluids, electrolytes, and glycogen for optimal fight performance.
Stepwise Approach:
1. Fluids:
Drink 1.5 L per kg of weight lost during cut
Use electrolyte solution (e.g., 500–700 mg sodium/L)
Avoid overhydration (bloating) – sip steadily
2. Carbohydrates:
1–1.2 g/kg/hour for 4 hours post weigh-in
Choose easily digestible foods: rice, bread, banana, honey, oats, sports drinks
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POST-WEIGH-IN REHYDRATION (WITHIN 4–6 HRS BEFORE MATCH)

Protein:

- Moderate intake (~20–25 g per meal) to support recovery
- Sources: eggs, whey shake, yogurt, lean chicken

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UNSAFE "CUTTING" PRACTICES TO AVOID

Diuretics

Use of Laxatives

Water Fasting/ Restricting Fluids

Training with rubber/plastic suits

Skipping Meals

Increased Exercise

Sauna

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Key Takeaways
Plan weight reduction weeks in advance, not days
Rehydrate strategically, not excessively
Prioritize performance, safety, and mental sharpness over rapid weight loss
Work with a qualified sports nutritionist for individualized guidance
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COMMON SUPPLEMENTS IN KICKBOXING

Supplement :Creatine Monohydrate

Dosage:

Loading: 20 g/day (5 g × 4 days) for 5–7 days

Maintenance: 3–5 g/day

Benefits :

- ✅ Increases muscle power, explosiveness, and strength
- ✅ Improves repeated high-intensity performance
- ✅ Aids muscle recovery

Risk and limitation:

Temporary water retention

Not ideal just before weigh-in

Some may feel bloated

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COMMON SUPPLEMENTS IN KICKBOXING

Supplement: Beta-Alanine

Dosage:

3–6 g/day divided doses (with meals) for 4+ weeks

Benefits:

- ✅ Buffers lactic acid → delays fatigue
- ✅ Enhances endurance during rounds

Possible Risks:

Can cause tingling (paresthesia)

Must be taken long-term for effect

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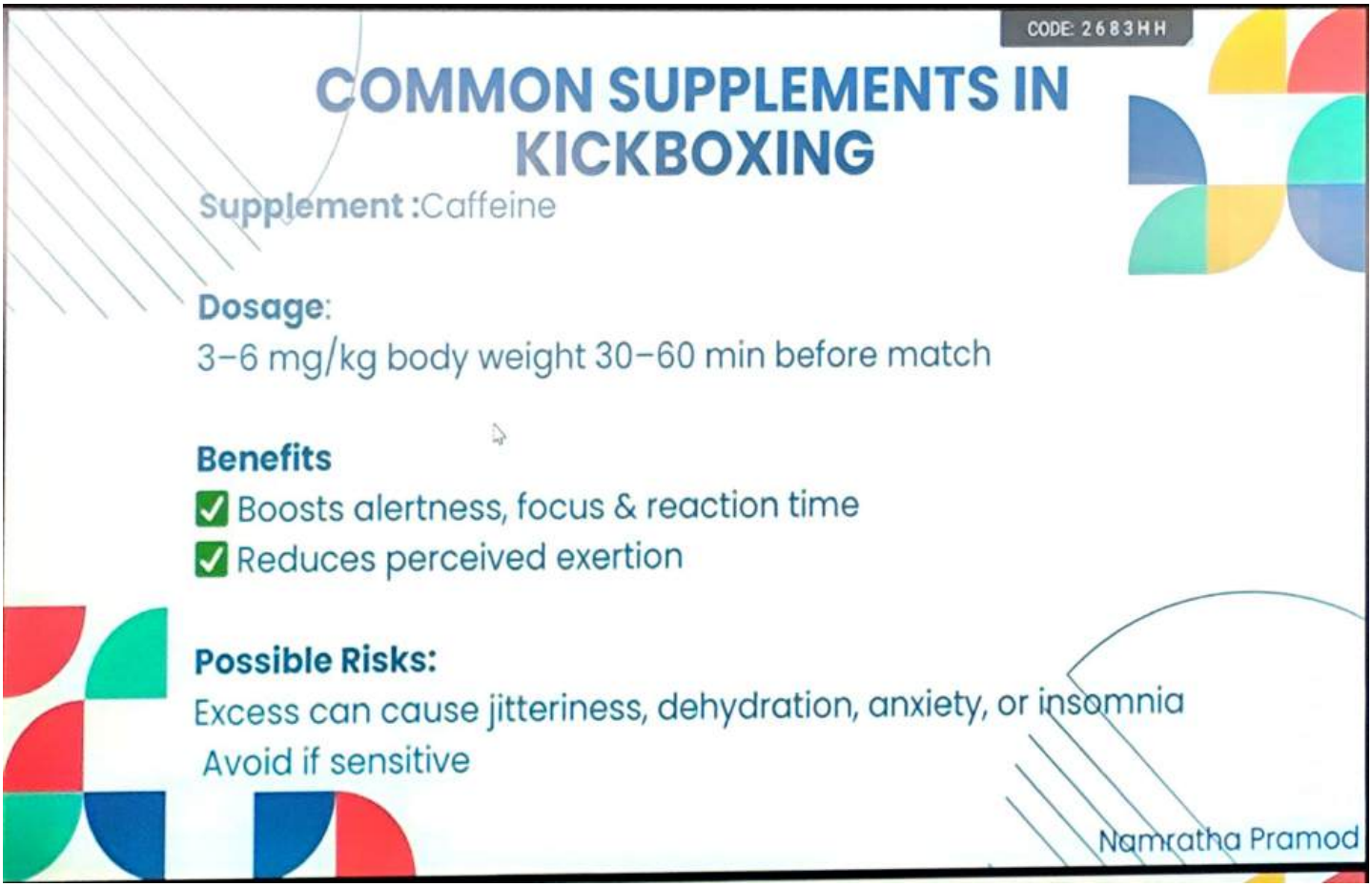
CODE: 2683HH
COMMON SUPPLEMENTS IN KICKBOXING
Supplement :Caffeine
Dosage:
3–6 mg/kg body weight 30–60 min before match
Benefits
✅ Boosts alertness, focus & reaction time
✅ Reduces perceived exertion
Possible Risks:
Excess can cause jitteriness, dehydration, anxiety, or insomnia
Avoid if sensitive
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COMMON SUPPLEMENTS IN KICKBOXING

Supplement: Electrolyte Drinks

Dosage: As needed: 500–1000 mL/hr training
Contains Na 400–700 mg/L

Benefits:

- ✅ Prevents dehydration, cramps, and fatigue
- ✅ Replenishes sodium & potassium

Possible Risks:

Overuse may cause bloating
Some contain excess sugar

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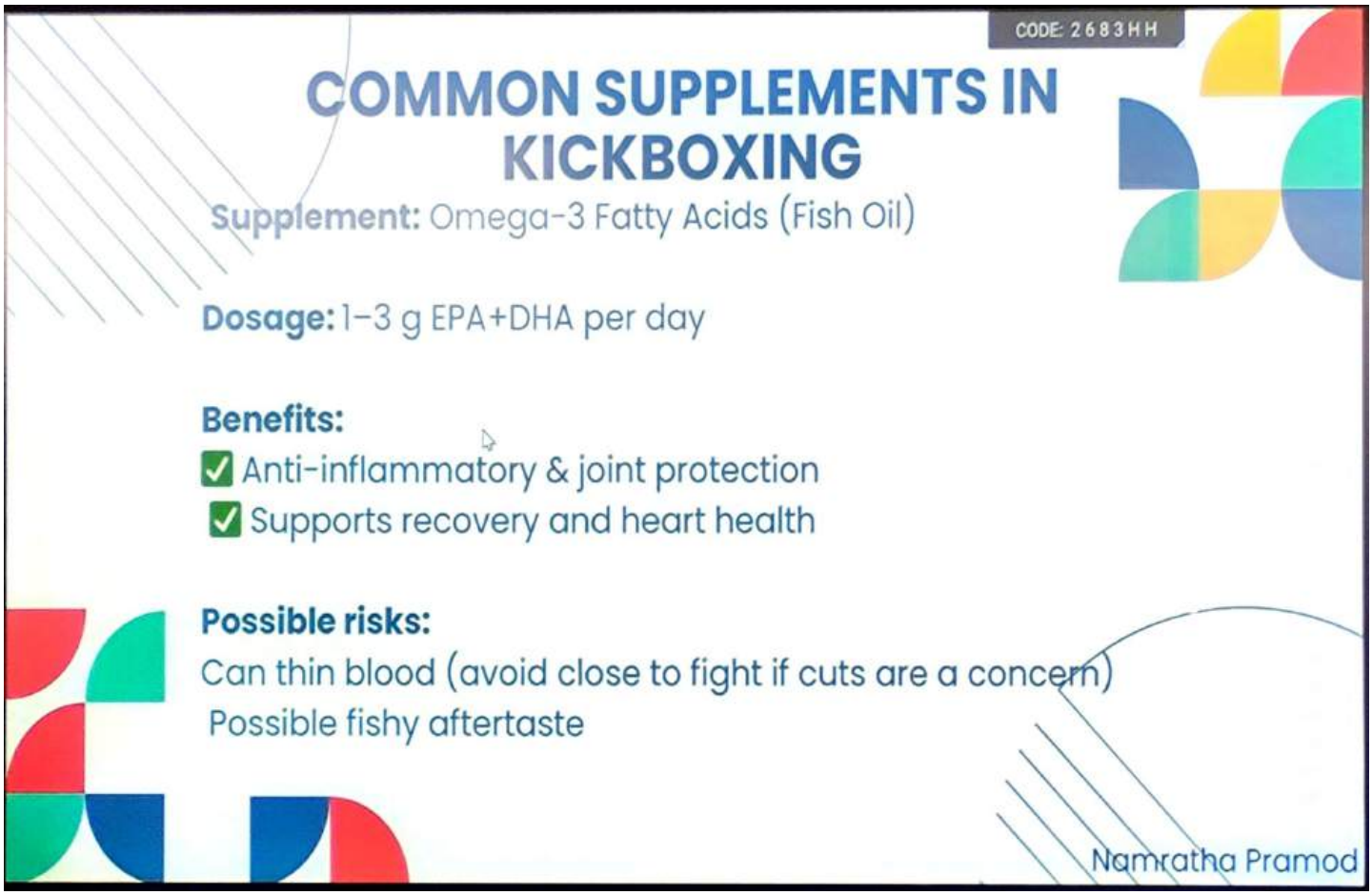
CODE: 2683HH
COMMON SUPPLEMENTS IN KICKBOXING
Supplement: Omega-3 Fatty Acids (Fish Oil)
Dosage: 1–3 g EPA+DHA per day
Benefits:
✅ Anti-inflammatory & joint protection
✅ Supports recovery and heart health
Possible risks:
Can thin blood (avoid close to fight if cuts are a concern)
Possible fishy aftertaste
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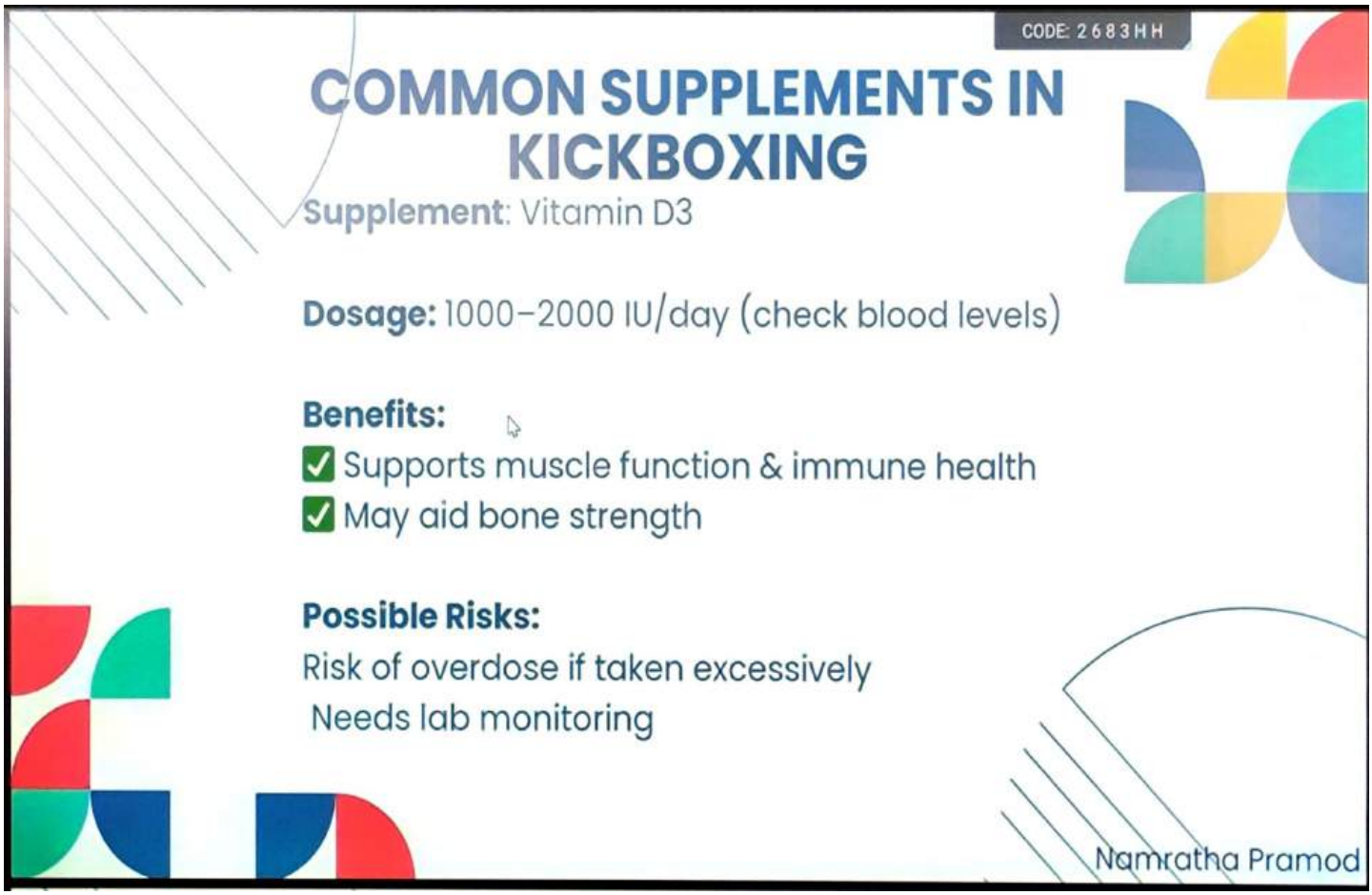
CODE: 2683HH
COMMON SUPPLEMENTS IN KICKBOXING
Supplement: Vitamin D3
Dosage: 1000–2000 IU/day (check blood levels)
Benefits:
✅ Supports muscle function & immune health
✅ May aid bone strength
Possible Risks:
Risk of overdose if taken excessively
Needs lab monitoring
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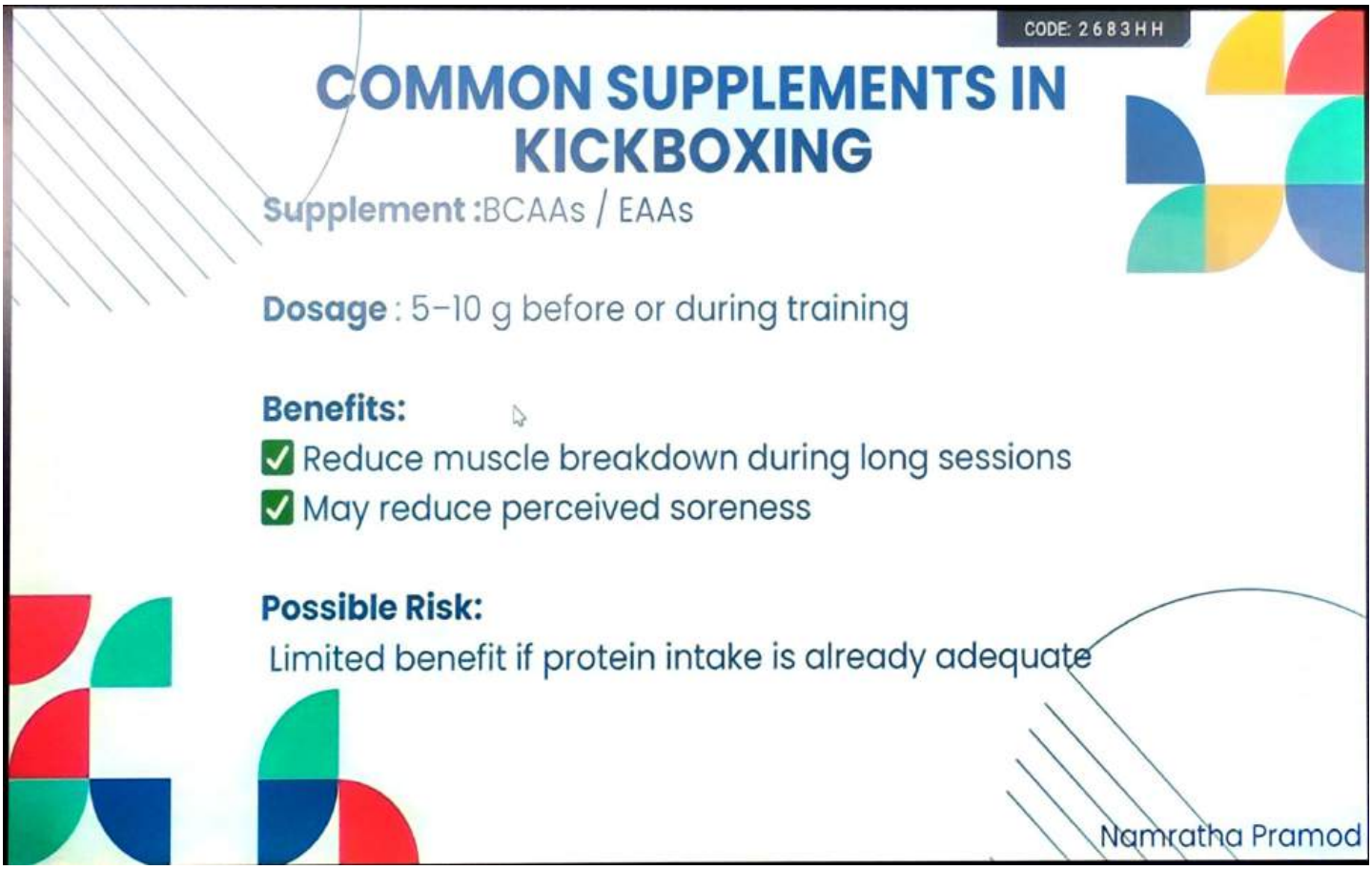
CODE: 2683HH
COMMON SUPPLEMENTS IN KICKBOXING
Supplement :BCAAs / EAAs
Dosage : 5–10 g before or during training
Benefits:
Reduce muscle breakdown during long sessions
May reduce perceived soreness
Possible Risk:
Limited benefit if protein intake is already adequate
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CODE: 2683HH

COMMON SUPPLEMENTS IN KICKBOXING

Supplement : Beetroot Juice (Nitrates)

Dosage: 300–500 mL (or 6–8 mmol nitrate) 2–3 hrs before match

Benefits:

- ✅ Improves oxygen efficiency & endurance
- ✅ Natural performance enhancer

Possible Risks:

GI discomfort in some

Variable individual response

Namratha Pramod

CODE: 2 6 8 3 H H

COMMON SUPPLEMENTS IN KICKBOXING

Supplement : Multivitamin (Athlete-Specific)

Dosage : Once daily (as per label)

Benefits:

- ✅ Covers micronutrient gaps
- ✅ Supports energy metabolism & immunity

Possible Risks:

Overuse unnecessary if diet is balanced

Risk of excess fat-soluble vitamins (A, D, E, K)

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CODE: 2683HH

PEAK PERFORMANCE PYRAMID

Supplements:
Food compounds used in ways that specifically aid performance.

Sport Food:
Products designed to fuel trainings by improving ease of consumption, tolerance and absorption.

Nutrient Timing:
Eating specific nutrients at specific times to boost efficiency of utilization & training adaptions.

Micros:
Produce, seeds, herbs provide vitamins, minerals, fiber & phytos to promote good health & healing.

Macros:
Real food complex carbs, fats, plant /animal proteins provide energy & satisfaction.

Namratha Pramod

CODE: 2683HH

COMMON SUPPLEMENTS IN KICKBOXING

Supplement :Whey Protein

Dosage: 20–30 g post-training or as per protein needs (1.6–2.2 g/kg/day total)

Benefits :

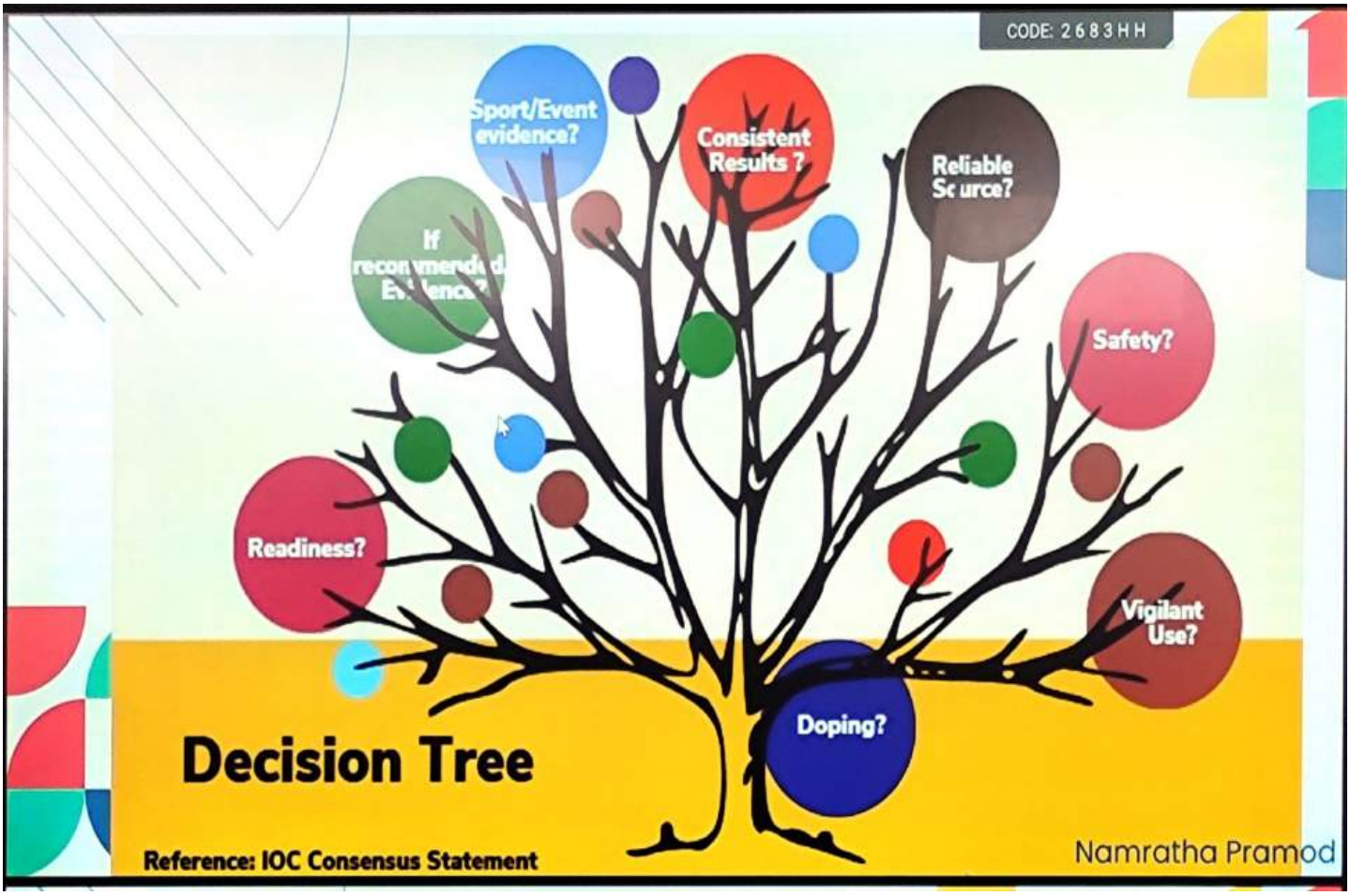
- ✅ Promotes muscle recovery and repair
- ✅ Convenient protein source
- ✅ Aids lean mass maintenance during weight cuts

Risk and limitation:

Possible lactose intolerance in some

Not a substitute for whole food

Namratha Pramod


CODE: 2683HH
Sport/Event evidence?
Consistent Results ?
Reliable Source?
If recommended Evidence?
Safety?
Readiness?
Vigilant Use?
Doping?
Decision Tree
Reference: IOC Consensus Statement
Namratha Pramod