Welcome to the COPE Webinar Series for Health Professionals!

November 9, 2016

The PRISE Protocol for Optimal Health and Performance

Moderator: Lisa Diewald, MS, RD, LDN
Program Manager
MacDonald Center for Obesity Prevention & Education

Handouts of the slides are posted at: www.villanova.edu/COPE

Welcome to the COPE Webinar Series for Health Professionals!

• Enhance Education
• Participate in Research
• Partner with agencies and organizations
• Provide Continuing Education

MacDonald Center for Obesity Prevention and Education (COPE) Goals

The PRISE Protocol for Optimal Health and Performance

Objectives:
1. Identify the leading lifestyle-related diseases
2. Explain the limitations of the current exercise and nutrition recommendations
3. Describe the evidence-based exercise, nutrition and mind/body strategies necessary to enhance health and physical performance in individuals across the age and fitness/health spectrum

The PRISE Protocol for Optimal Health and Performance

CE Credits

Notice:
• Villanova University College of Nursing is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center Commission on Accreditation
• Villanova University College of Nursing Continuing Education/COPE is a Continuing Professional Education (COPE) Accredited Provider with the Commission on Dietetic Registration
• The American College of Sports Medicine’s Professional Education Committee certifies that Villanova University College of Nursing Continuing Education, Center for Obesity Prevention and Education (COPE) meets the criteria for official ACSM Approved Provider status (2015-December, 2018). Provider ID: 698849

Credits:
• This webinar awards 1 CPEU for dietitians
• Suggested CDR Learning Need Codes: 2000, 4060, 9020, 5370, Level 2

CE Credits

The PRISE Protocol for Optimal Health and Performance

Paul J. Arciero FACSM, FTDS
Professor, Health and Science Department
Director, Human Nutrition and Metabolism Laboratory
Skidmore College
Owner, PRISE LLC and GenioFit™
The planners have no disclosures to report.
The presenter discloses that he is CEO and President of PRISE LLC

Accredited status does not imply endorsement by Villanova University, COPE or the American Nurses Credentialing Center of any commercial products or medical/nutrition advice displayed in conjunction with an activity.

DISCLOSURE

The PRISE Protocol

A. Barriers to Optimal Health & Performance
   A. Nutrition Recommendations
   B. Exercise Guidelines

B. “First Strike” of Optimal Health = Healthy Weight Loss

C. PRISE Protocol

D. Live it...

A. Barriers to Optimal Health & Performance

Excuses...

- I’m Too:
  - Busy... No Time!
  - Tired
  - Old
  - Out of shape and overweight
  - Achy

- I don’t like exercising...
  - Too boring
  - No confidence, don’t like gyms

Genes...

Only accounts for ~40% of risk
TOXIC ENVIRONMENT

WHY IS IT SO DIFFICULT TO BE FIT AND HEALTHY?

EATING TOO MUCH

- Calorie intake has increased ~250 calories/day


CARB ADDICTS

PROTEIN-DEPLETED


Only in America...

Almost 10% of the year is spent watching TV

Google.com
Sitting... the new smoking

- Sitting for >6 hrs per day: 68% greater risk of being overweight/obese
- Total sitting time = increased BMI
- Men sit ~20 min longer per day than women


The PRISE Protocol

A. Barriers to Optimal Health & Performance
   A. Nutrition Recommendations
   B. Exercise Guidelines
   B. “First Strike” of Optimal Health = Healthy Weight Loss
   C. PRISE Protocol
   D. Live it...

Nutrition Recommendations

- USDA

ChooseMyPlate.gov

Still more competition...

Exercise Recommendations - ACSM

Cardio:
- 30-60 min mod-intensity 5 days/week or 20-60 min vigorous-intensity 3 days/week (~4 hrs/week)

Resistance:
- 2-4 sets, 8-20 repetitions 2-3 days/week (~3 hrs/week)

Flexibility:
- 2-4 sets, 60 sec/stretch at least 2-3 days/week (~3 hrs/week)

Neuromotor (functional mmts; balance, agility):
- 20-30 min/day, 2-3 days/week (~1.5 hrs/week)

9-12 hours a week of Exercise! = 1 ½ hrs everyday!

Less than 20% of Americans meet these recommendations!!
The PRISE Protocol

A. Barriers to Optimal Health & Performance
   A. Nutrition Recommendations
   B. Exercise Guidelines
B. “First Strike” of Optimal Health = Healthy Weight Loss
C. PRISE Protocol
D. Live it...

Our Best Defense Doesn’t Work

Led to believe it’s this easy...

Goal

- New Paradigm of Nutrition and Fitness Training
- Time Efficient (only 4 days per week of hour or less)
- Emphasizes Quality over Quantity
- Scientifically validated and tested
Our Guiding Principal

SIMPLICITY IS THE ULTIMATE FORM OF SOPHISTICATION

~ Leonardo da Vinci

PRISE Protocol

P
PROTEIN-PACING
R
RESISTANCE
I
INTERVAL
S
STRETCHING
E
ENDURANCE

The PRISE Protocol Exceeds Scientific Benchmarks

10 lb weight loss reduces diabetes risk by 58% (NEJM, 2002)
PRIS results in 11 lb weight loss in 16 weeks: 211 to 200 lbs

Reducing waist circumference by ≥ 5 cm results in ≥ 10% improvements in at least one cardiometabolic risk factor (ID, 1997)
PRIS results in ≥ 5 cm reduction in waist circumference 105 to 94 cm

A 10% reduction in total cholesterol reduces coronary heart disease by 30% (AHA, Cohan JD, 1997)
PRIS reduces total cholesterol by ≥ 21% 192 to 151 mg/dL

A 12 point reduction in Systolic Blood Pressure reduces cardiovascular disease risk by 23% (AHA, 1999)
PRIS reduces SBP by 14 points 130 to 116 mmHg

Blood glucose (sugar) of 84 mg/dl or < associated with reduced CVD
(Diabetes Care, 1999)
PRIS reduces blood sugar by 98 to 84 mg/dL

Acknowledgement from Scientific Community and Popular Press

PRISE Protocol

PROTEIN-PACING (SKELETAL MUSCLE PROTEIN SYNTHESIS)

3 Trials of 80 grams of Protein:
1) Bolus – 2 X 40 g every 6 hrs
2) Intermediate – 4 X 20g every 3 hrs
3) Pulse – 8 X 10 g every 1.5 hrs

PRISE 1

Timed-daily ingestion of whey protein and exercise training reduces visceral adipose tissue mass and improves insulin resistance: the PRISE study


11/9/2016
PRISE Protocol

- Resistance Training
- Protein-Pacing
- Endurance Training
- Interval Training
- Stretching/Restorative Training

Physical Characteristics

<table>
<thead>
<tr>
<th></th>
<th>P</th>
<th>P + RT</th>
<th>PRISE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, M/F</td>
<td>7/11</td>
<td>5/17</td>
<td>9/8</td>
</tr>
<tr>
<td>Age, yr</td>
<td>50 ± 2</td>
<td>47 ± 1</td>
<td>52 ± 1</td>
</tr>
<tr>
<td>Height, cm</td>
<td>172 ± 2</td>
<td>167 ± 2</td>
<td>177 ± 2</td>
</tr>
<tr>
<td>Weight, kg</td>
<td>83 ± 3</td>
<td>83 ± 5</td>
<td>88 ± 4</td>
</tr>
<tr>
<td>Body fat, %</td>
<td>35 ± 2</td>
<td>40 ± 1</td>
<td>34 ± 2</td>
</tr>
<tr>
<td>Body mass index</td>
<td>28 ± 1</td>
<td>29 ± 1</td>
<td>28 ± 1</td>
</tr>
<tr>
<td>Heart rate, beats/min</td>
<td>67 ± 3</td>
<td>69 ± 2</td>
<td>61 ± 2</td>
</tr>
</tbody>
</table>

Body Composition

- A
  - Fat Mass % Change
  - P, P+RT, PRISE
- B
  - Lean Mass % Change
  - P, P+RT, PRISE

PRISE 2

Article

Protein-Pacing from Food or Supplementation Improves Physical Performance in Overweight Men and Women: The PRISE 2 Study


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2 pmicharli@gmail.com (P.J.A.); rohanedmonds@gmail.com (R.C.E.); kmalaboutten@gmail.com (K.A.B.); christopherl.gentile@gmail.com (C.L.G.); carlinjketcham@gmail.com (C.K.); christopher.davis@gmail.com (C.D.); matriale.p.recto@gmail.com (M.R.); qianzheng.skidmore.edu (Q.Z.); junzhou@gmail.com (J.Z.).
**4 Month Study**

<table>
<thead>
<tr>
<th></th>
<th>WP</th>
<th>FP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex (M/F)</td>
<td>4/5</td>
<td>7/5</td>
</tr>
<tr>
<td>Age (yr)</td>
<td>48 ± 4</td>
<td>52 ± 1</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>173 ± 3</td>
<td>172 ± 3</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>96 ± 3</td>
<td>97 ± 5</td>
</tr>
<tr>
<td>Body mass index</td>
<td>32 ± 2</td>
<td>33 ± 1</td>
</tr>
</tbody>
</table>

- Whey Protein (WP): 2-3 servings/day
- Food Protein (FP): high quality food only

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**STRENGTH!**

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**MUSCULAR ENDURANCE**

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**BALANCE & FLEXIBILITY**

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**MUSCLE MASS**

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Sample Menus from the FP and WP nutritional intervention diet plans during the 16 week FHSM intervention. Menus were similar in macronutrient distribution:

<table>
<thead>
<tr>
<th></th>
<th>Food Protein (FP)</th>
<th>Whey Protein (WP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>Egg, blanc food, cheese, ham, toast, coffee</td>
<td>Egg, blanc food, cheese, ham, toast, coffee</td>
</tr>
<tr>
<td></td>
<td>30 g protein, 25 g carbohydrate, 15 g fat</td>
<td>30 g protein, 25 g carbohydrate, 15 g fat</td>
</tr>
<tr>
<td>Mid-morning snack</td>
<td>Greek yogurt, fresh fruit, nuts</td>
<td>Greek yogurt, fresh fruit, nuts</td>
</tr>
<tr>
<td></td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
</tr>
<tr>
<td>Lunch</td>
<td>Fish/poultry/beef, spinach, olive oil, onion, carrots, bell peppers, dalmatian cranberries, dried fruit, whole grain pasta</td>
<td>Fish/poultry/beef, spinach, olive oil, onion, carrots, bell peppers, dalmatian cranberries, dried fruit, whole grain pasta</td>
</tr>
<tr>
<td></td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
</tr>
<tr>
<td>Mid-afternoon snack</td>
<td>Fresh vegetables, nuts</td>
<td>Fresh vegetables, nuts</td>
</tr>
<tr>
<td></td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
</tr>
<tr>
<td>Dinner</td>
<td>Fish/poultry/beef, whole grain rice/pasta or legumes, field greens, tomatoes, broccoli, carrots, mashed potatoes, dried fruit, olive oil</td>
<td>Fish/poultry/beef, whole grain rice/pasta or legumes, field greens, tomatoes, broccoli, carrots, mashed potatoes, dried fruit, olive oil</td>
</tr>
<tr>
<td></td>
<td>25 g protein, 30 g carbohydrate, 15 g fat</td>
<td>25 g protein, 30 g carbohydrate, 15 g fat</td>
</tr>
<tr>
<td>Evenining snack</td>
<td>Greek yogurt/cottage cheese, fresh fruits, nuts</td>
<td>Greek yogurt/cottage cheese, fresh fruits, nuts</td>
</tr>
<tr>
<td></td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
<td>20-25 g protein, 20 g carbohydrate, 5 g fat</td>
</tr>
</tbody>
</table>
PRISE 3

Protein-Pacing and Multi-Component Exercise Training Improves Physical Performance Outcomes in Exercise-Trained Women: The PRISE 3 Study†

Paul J. Ancier,1,2 Stephen J. Ives,1 Chelsea Norton,3 Daniela Eschlimann,3 Olivia Mistriucci,3 Gabe O’Brian,5 Maia Paul,1 Michael J. Outcome,2 Vincent Miller3, Caitlin Sheridan3 and Feng Xu,1,2

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2 Waist circumference + 90 cm

3 Body fat percentage + 25%

4 Waist circumference + 90 cm

5 Body fat percentage + 25%

MUSCULAR ENDURANCE

STRENGTH

POWER!

ARTERIAL STIFFNESS
Trained men (4×X/week) 25-55 yrs old

**Upper Body Strength**

**Lower Body Power**

**Aerobic Power and Flexibility**
Table A1: Sample menus from the RISE and PRISE nutritional intervention diet plans during the 12 week intervention. Menus were isocaloric and similar in meal timing.

<table>
<thead>
<tr>
<th>Time</th>
<th>RISE (1.0 g/kg BW/day)</th>
<th>PRISE (2.0 g/kg BW/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakfast</td>
<td>Steel cut oats, eggs, honey, nut/seed butter;</td>
<td>Eggs/egg whites, blueberries, coconut</td>
</tr>
<tr>
<td></td>
<td>Multivitamin®; 15 g protein; 30 g carbohydrate;</td>
<td>Buttermilk, w/ caffeine beverage, Supplemen</td>
</tr>
<tr>
<td></td>
<td>15 g fat</td>
<td>Excel B; 25 g protein; 15 g carbohydrate;</td>
</tr>
<tr>
<td></td>
<td>15 g fat</td>
<td>15 g fat</td>
</tr>
<tr>
<td>Mid-morning snack</td>
<td>12 g protein, 14 g carbohydrate, 12 g fat</td>
<td>IsaPro®, fresh fruit, 20 g protein; 3 g carbohydrate; 1.5 g fat</td>
</tr>
<tr>
<td>Lunch</td>
<td>Nature Valley Protein Chewy Barrell</td>
<td>EvePro®, fresh fruit, 20 g protein; 30 g</td>
</tr>
<tr>
<td></td>
<td>Whole grain pita, banana/chicken, baked</td>
<td>carbohydrate; 15 g fat</td>
</tr>
<tr>
<td></td>
<td>chips, fresh fruit; 20 g protein; 30 g</td>
<td></td>
</tr>
<tr>
<td></td>
<td>carbohydrate; 15 g fat</td>
<td></td>
</tr>
<tr>
<td>Mid-Afternoon snack</td>
<td>Nature Valley Sweet and Salty Nut Granola Bars®, Horizon Organic Milk®</td>
<td>IsaLean Bars®, 1/2 cup of Greek yogurt or fruit</td>
</tr>
<tr>
<td></td>
<td>Fish/poultry/beef, whole grain pasta or</td>
<td>25 g protein; 20 g carbohydrate; 5 g fat</td>
</tr>
<tr>
<td></td>
<td>legumes, fresh vegetables, dried fruit, olive</td>
<td></td>
</tr>
<tr>
<td></td>
<td>oil, water; 20 g protein; 30 g carbohydrate;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 g fat</td>
<td></td>
</tr>
<tr>
<td>Dinner</td>
<td>Fresh fruit, nuts; 2–3 g protein; 20 g</td>
<td>Greek yogurt, fruit, Ionix Supreme®; 20 g</td>
</tr>
<tr>
<td></td>
<td>carbohydrate; 9 g fat</td>
<td>protein; 20 g carbohydrate; 5 g fat</td>
</tr>
<tr>
<td>Evening snack</td>
<td>Fresh fruit, nuts; 2–3 g protein; 20 g</td>
<td>Replenish®; electrolyte beverage</td>
</tr>
<tr>
<td></td>
<td>carbohydrate; 9 g fat</td>
<td></td>
</tr>
<tr>
<td>Exercise days*</td>
<td>Gatorade G2®, electrolyte beverage</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PRISE Routine

Summary

- Current nutrition and exercise guidelines are difficult to meet.
- Need for a feasible, realistic and evidence-based Lifestyle.
- PRISE — scientifically proven in obese — fit to improve body composition, cardiometabolic health and performance.
- Available in mobile App

FUTURE of PRISE...

“To Infinity and Beyond”

Mobile App

(www.GenioFit.com)
MANY THANKS!

- Students:

- Colleagues:

- Supporters:

- All the research volunteers and clients.

Deep within humans dwell those slumbering powers: powers that would astonish them, that they never dreamed of possessing: forces that would revolutionising their lives if aroused and put into action.

Orison Marden

References


Upcoming FREE Continuing Education Webinar

Jeremy Clorfone Ph.D.
Head Psychologist
Advocate Weight Management Program

Title: Utilizing Social and Cognitive Psychology for Improving Obesity Treatment
Date: Wednesday, December 7, 2016
Time: 12:00PM-1 PM EDT
Register at villanova.edu/cope

LIVE IT! PRISE IN PRACTICE

Anciero teams with brother to get 3rd in National Over-50 event

Paul Anciero, left, of Saratoga Springs and a professor at Skidmore, and his brother, John Anciero, of Matthews, N.C., after they placed third in the National Over-50 Senior Championships at Germiston Cricket Club in Philadelphia.
Questions and Answers!

To receive monthly emails on upcoming COPE events, please join COPE’s Contacts on our website.
Thank you for your time and interest.