Nutrition for the College Athlete?

– a Practical View

Steven Orris MS, CSCS, CISSN, CES
Director of Sport Performance
Adjunct Professor
Nova Southeastern University

Experience

BS Exercise Science

Florida Atlantic University

MS Health Education

Hofstra University

Certifications

CSCS
SCCC
CISSN
USAW
CES

Internships

Miami Dolphins 2000
Houston Astros 2001

Graduate Assistant

Hofstra University 2001-2003

University of Florida

2004-2011

Nova Southeastern University

2011-present

People Who Shaped Me

Dr. Sue Graves
- Florida Atlantic University

Brad Roll
- NFL Strength Coach

Rob Glass
- Oklahoma State University

Lou Hernandez
- University of North Carolina

Mickey Marotti
- Ohio State University

The Field has changed

ALL sports can benefit from a Strength and Conditioning Coach

Being a Strength Coach shapes my perspective, but I am also a teacher, a researcher, and a student.

S & C now includes

Movement Analysis

Corrective Exercise

Functional Strength Training

Increases in strength and power

Conditioning

Mental Toughness

Injury prevention

"weak link"

Nutrition – immediate effect

Nova Southeastern University

Division II Athletic Program

17 Intercollegiate sports

No Football

Sunshine State Conference

9 schools in Florida

375 Student- Athletes

Sports Nutrition

“You Cannot out train poor nutrition”

“Good nutrition makes a good athlete GREAT”

“Would you put low grade gas in a Ferrari?”

Does Sports Nutrition Work?

ISSN exercise & sport nutrition review:
research & recommendations

Do coaches recognize how important nutrition is?

Do student-athletes acknowledge the benefit of proper fueling?

Sports Nutrition
Needs to be taught
with the audience in mind

We need to be realistic by providing practical and useable information or our attempts will fail

Nutrition Needs

General Population

- 2000-3000 calories
- Protein - .8g/kgbw
- Nutrient timing
  - Glycemic Index
    - Avoid High GI food

Athletic Population

- 3000-5000 calories
- Protein -1.5-2.5^
- Nutrient timing
  - Pre-, During, Post- workout
    - High GI is beneficial

Why Do Student-athletes struggle with Nutrition?

Caloric Needs

Food Choices

Scholarship/Budget

Travel

NCAA

- Bylaw 16.5

Social Life?

Life Skills?

Caloric Needs

Resting Metabolic Rate (RMR)

- Energy to Function
- HT, WT, Age, BF% contribute to need
- Muscle burns energy. FAT does not!

Total Energy expenditure (TEE)

- Energy needed for activity
- RMR x Activity Factor
  - 1.53 Sedentary
  - 1.76 Active
  - 2.25 Very Active

Confused?

Steve Orris

- 37 years old
- 6’2”
- 220lbs

RMR = 66.5+(13.75x100kg)+
(5.003 x 187.96cm) –
(6.775 x 37yrs) =

2130

- How much to avoid losing weight?

TEE = RMR x 1.76 = **3750**

x 2.25 = **4793**

Weight Gain?

Weight Loss?

3500cal/wk

= 1lb

Bod-Pod: Resting Metabolic Rate & Total Energy Expenditure Analysis						
	RMR (kcal)			TEE (kcal)		
	Average	Low	High	Average	Low	High
Baseball	1860.2	1370	2457	3236	2481	4275
Softball	1380.5	1082	1652	2402	1883	2874
Volleyball	1454	1285	1665	2530	2210	2897
Men's Basketball	2046	1816	2325	3560	3160	4045
Women's Basketball	1457	1113	1745	2525.6	1937	3036
Women's Golf	1211	920	1517	2107	1601	2640
Men's Golf	1705	1431	2058	2967	2490	3581
Tennis	1344	989	1530	2338.6	1721	2662
Men's Soccer	1731.4	1411	1939	3012.7	2613	3374
Women's Soccer	1289.7	1124	1549	2244.1	1956	2695
Rowing	1353.7	923	1742	2355.5	1606	3031
Men's Track - Throw	2020.3	1690	2261	3515	2941	3934
Women's Track Throw	1461	1461	1461	2542	2542	2542
Men's Track - Sprint/Jump	1556	1318	1704	2707	2293	3517
Women's Track - Sprint/Jump	1223	965	1448	2114	1676	2457
Men's Track - Pole Vault	1683	1676	1690	2928.5	2916	2941
Women's Track - Pole Vault	1195	1000	1390	2081	1740	2419
Men's XC	1560	1365	1725	2715	2375	3001
Women's XC	1208	1146	1297	2103	1994	2257
Men's Swimming	1774	1513	2131	3087	2446	3684
Women's Swimming	1291	1043	1536	2246	1839	2568

NCAA Collegiate Athlete Schedule

- 6 – 7 am - conditioning
- 8 – noon - class
- 2:30 – training room
- 3 -5 – Practice
- 5 – 6 – weights
- 7 – 9 – study hall
- 9pm – HW, ECA, social?
- Sleep?
- Breakfast?
- Recovery shake
- Lunch
- Recovery shake
- Dinner
- Snack

How Do we Train

- Dynamic Warm – Up
- Movement Prep
- Workout
- Corrective Exercise
- Finisher
- Stretch

- HR BPM?
- Calories
- Glycogen Depletion?

How does this affect your body?

Finisher

Why?

- Plate Push

  20kg plate x 60yds
- Sled Push

  300lbs x 60yds
- Pit Shark

  168lbs x 2.5 = 420lbs

  AMRAP in 4 mins

- Glycogen stores?
- Replenish Glycogen
- Energy for tomorrow

How does this affect training?

Glycogen depletion

- Glycogen is the main fuel source for aerobic activity AND repeated bouts of anaerobic activity.

- Depletion of Glycogen stores may result in decreased performance and Overtraining

How Do We Promote Recovery?

- Gatorade Shake – 270cal

  PRO 20g
  CHO 45g
  FAT 1g

- Post Workout Meal
  - High Glycemic Index foods
  - Within 1 hour after the completion of exercise
  - Not always possible due to schedule

- Need fuel for tomorrow

Food Choices on Campus

- Greens, Etc.
  - Salad Bar
- Food Bar
  - Rotating Menu
- Juice Blendz
  - Smoothie
- Subway
- Pizza Loft
- Denny’s
- Convenience store

Food Quality

Good choices can be made, but some research needs to done by the Student-Athlete…..

What is the menu?

How was it prepared?

How many calories are in it?

Scholarship/Budget

- NSU policy – other schools will differ

- **<u>"Full-ride" Athletic scholarship</u>**

– Tuition	$25,400
– Books	$800
– Fees	$650
– Housing	$9000
– Food	$4000

= $39,850/year

Food “Award”

- $2000/semester = $4000
  - Money is put onto a “Shark Card” that the SA can use anywhere on campus.

- Averages $20/day

  – If the Student-Athlete lives on campus and only eats on campus, is that enough money to get the amount of calories they will need?

2200 Calorie/Day

2200 Calorie/day		
Cost	Food Item	Calories (Estimated)
1.99	Juice, 16 oz	170
0.95	Milk, 8 oz non fat	90
2.99	Starbucks oats w/frt/nuts	390
7	Greens Salad w/Chicken	525
0	Water	0
3.89	Subway 6 inch	400 +/-
2.3	Chips & Soda	300
3.39	Fruit cup	180
1.99	Greek Yogurt	150
Total: ~$24.50		2205 kcals

4000+ Cal/Day

4000+ Calorie/day		
Cost	Food Item	Calories (Estimated)
1.99	Juice, 12 oz	170
1.89	Milk, 16 oz low-fat	260
3.25	Eggs	225
0.99	Toast	100
1.75	Meat	150-200
5.00	Subway 12 inch	820
2.20	Chips & Drink	300
3.39	Fruit Cup	180
1.89	Nuts	290
5.25	Juice Blenz Smoothie	400-600 (Avg 500)
7.69	Chicken chop	570
2.75	Pizza Slice	250
1.89	Milk, 16oz	260
Total: $40.00		4125 kcals

Food “Award”

- $2000/semester = $4000
- Averages $20/day
  - If the Student-Athlete lives on campus and only eats on campus, is that enough money to get the amount of calories they will need?

NO!!

Division II Travel

- 6 hours by bus

Sunshine State Conference

- Barry Universtiy
- Nova Southeastern University
- Lynn University
- Rollins College
- University of Tampa
- Florida Southern
- St. Leo University
- Eckerd College
- Florida Tech

9 schools within the state

Nutrition “on the road”

- Provide a list of restaurants every hour on the trip
- Coaches can pre-order meals and take them on the bus
- Coaches can work with local restaurants to deliver food to the field before they leave.
- Nutrition “captains” will be the spokesperson for the team

NCAA Regulation

NCAA Bylaw 16.5

- Limits the amount of money allowed when traveling.

- $5, $10, $15 = $30 (NSU)

Why Do Student-athletes struggle with Nutrition?

Caloric Needs

Food Choices

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NCAA

- Bylaw 16.5

Social Life?

Life Skills?

What we do at NSU

-Main Goal is Injury Prevention

Evaluation

- PPE
- Concussion Baseline
- FMS
- Strength/Cond./FLEX
- Body Composition - BOD POD

Nutrition Policy

- BMI + BF%
  - "out of range" levels will trigger nutrition counseling
  - Body weight and Body composition will be monitored more closely

Bod Pod

NCAA regulation

- Body Composition cannot be used to punish
- Data needs to be collected privately and not shared
- Emphasis placed on a range rather than a number
- Focus on the trend rather than the current state
- Increase the focus on LBM rather than BF%
- Explain how body composition will affect performance

What we do at NSU

Bod Pod 2-3x/yr

- Pre-season, Post-season, Off-season

Ranges are given

- Males 8-15%
- Females 18-25%

Based off Normative Data

Track the results over a 2-4 year period

Assess the trends throughout the year and adjust

In-season?

What we do at NSU

Athletes are counseled individually by the Director of Sports Performance

Emphasis on 3 results

- LBM
- BF%
- Body Mass

Find something positive to focus on

What we do at NSU

Sport coaches are NEVER given the results

Athletes are categorized as ….

- Under range
- In range
- Over range

Head coaches will receive a report that illustrates the distribution of their team

Bod Pod

Men's Basketball

Last Name	First Name	Date of Birth	Test Date	Age	Gender	HT(in)	% Fat	Fat Mass (lb)	Fat Free Mass (lb)	Body Mass (lb)	Est. RMR (kcal/day)	Est. TEE (kcal/day)
		4/4/91	8/17/12	21.4	Male	73.5	10.8	19.2	158.1	177.3	1886	3282
		4/4/91	3/29/13	22.0	Male	74	6.3	10.7	158.9	169.6	1879	3269
		04/04/91	08/27/13	22.4	Male	74	6.4	11.2	163.7	174.9	1936	3369
		4/4/91	4/15/14	23.0	Male	74	9.7	17.2	160.0	177.3	1905.0	3315.0
		07/15/94	08/27/13	19.1	Male	70	9.9	16.7	152.5	169.3	1816	3160
		7/15/94	4/15/14	19.8	Male	70	14.4	26.4	156.2	182.5	1876.0	3264.0
		11/03/95	08/27/13	17.8	Male	77.5	22	36.9	190.0	226.9		
		11/3/95	4/15/14	18.5	Male	77.5	18.0	36.4	200.7	237.1	2415.0	4202.0
		2/26/93	8/17/12	19.5	Male	72.5	17	29.5	174.6	204.2	2098	3651
		2/26/93	3/29/13	20.1	Male	72	14	33.5	174.5	208.0	2104	3661
AVGERAGE						73.5	12.9			192.7		

Coaches Report

Women'sTrack and Field

Throwers

Green	0
Blue	4
Red	3

Mid- Distance

Green	1
Blue	6
Red	0

Sprinters

Green	1
Blue	9
Red	0

Cross – Country

Green	4
Blue	3
Red	0

Take Advantage of what we offer

- Physicians
- Nutritionists
- Psychologists
- Physical Therapists
- Athletic Trainers
- Strength & Conditioning Coaches

Eating Disorders?

- How do we ID the problem?
- Underweight is often easier to diagnose
- Bulimia and Body Image Disorders can often present as “healthy”

Supplements?

NCAA Bylaw 16.5.1

We can provide “non-muscle building” supplements in 4 categories….

1. Vitamins/Mineral
2. Energy Bars
3. Calorie Booster Shake
4. Carbohydrate/Electrolyte Drinks

NCAA Banned List

Amino Acids

Chrysin

Chondroitin

Creatine

Ginseng

Glucosamine

Glycerol

HMB

L – Carnitine

Melatonin

Pos – 2

Tribulus

Protein Powders

Protein Powders?

Protein may be supplemented as part of a “calorie replacement” drink.

Protein content must be less than 30% of the total

Caloric value of the drink

Muscle Milk Collegiate

Gatorade Recover

What if they do take supplements?

We try to be a resource and educate them on the products that are available.

Ask 5 questions?

What does it do?

What is in it? Proprietary Blend?

What is the dosage?

How does it work?

Is it banned?

www.drugfreesport.com

NSU Nutrition Plan

Educate

Train

Evaluate

How do we educate?

Nutrition Captains

Every team designates a “captain” that will be the spokesperson for the team regarding team meals.

Meetings

the Nutrition Team will meet 1/month with the captains to discuss topics in Nutrition

Nutrition Education

Practical information that help the SAs make good choices

1. Breakfast – How to fuel for a 6am workout
2. Hydration – How much do you need? How does this affect training?
3. Recovery – What to eat and when? GI score foods
4. Supplements?

5. ISSN position papers

Train

Our goals in Strength and Conditioning need to prioritize improvements on the field. All aspects of training need to be evaluated and re-directed toward this common goal

No one signs a scholarship to be a weight lifter

Evaluate

- Body comp evaluation 2x/year
  - More often for “out of range” athletes
- Injury and illness reports
- Strength, power, conditioning, and performance evaluation 2x/year
- Are the sport coaches using what we are offering?

We need to offer Practical Information

What is 500 cal?

1 plain bagel/cream cheese

Belgian Waffle/ 1 tbsp syrup

9oz lean steak

4 slices of bacon

4.5 oz of cheddar cheese

2 Snickers candy bars

1 Big Mac – no fries, no Coke

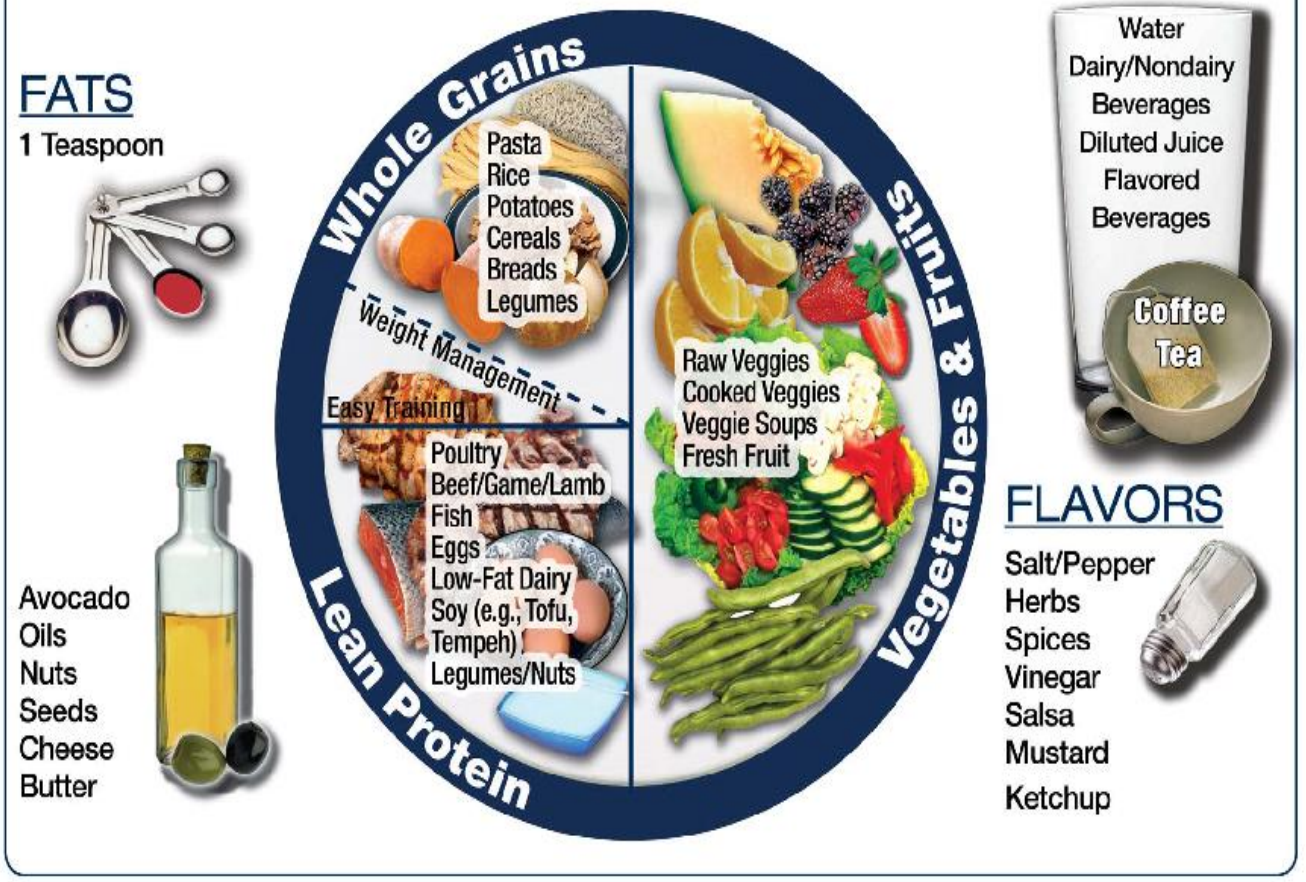
Nutrient Density

- A basic understanding of the concept of Nutrient Density will allow the SA to be accountable for the quality of calories they ingest.

- There are a lot of different ways to get 2500 calories!

ATHLETE'S PLATE

EASY TRAINING / WEIGHT MANAGEMENT:



The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

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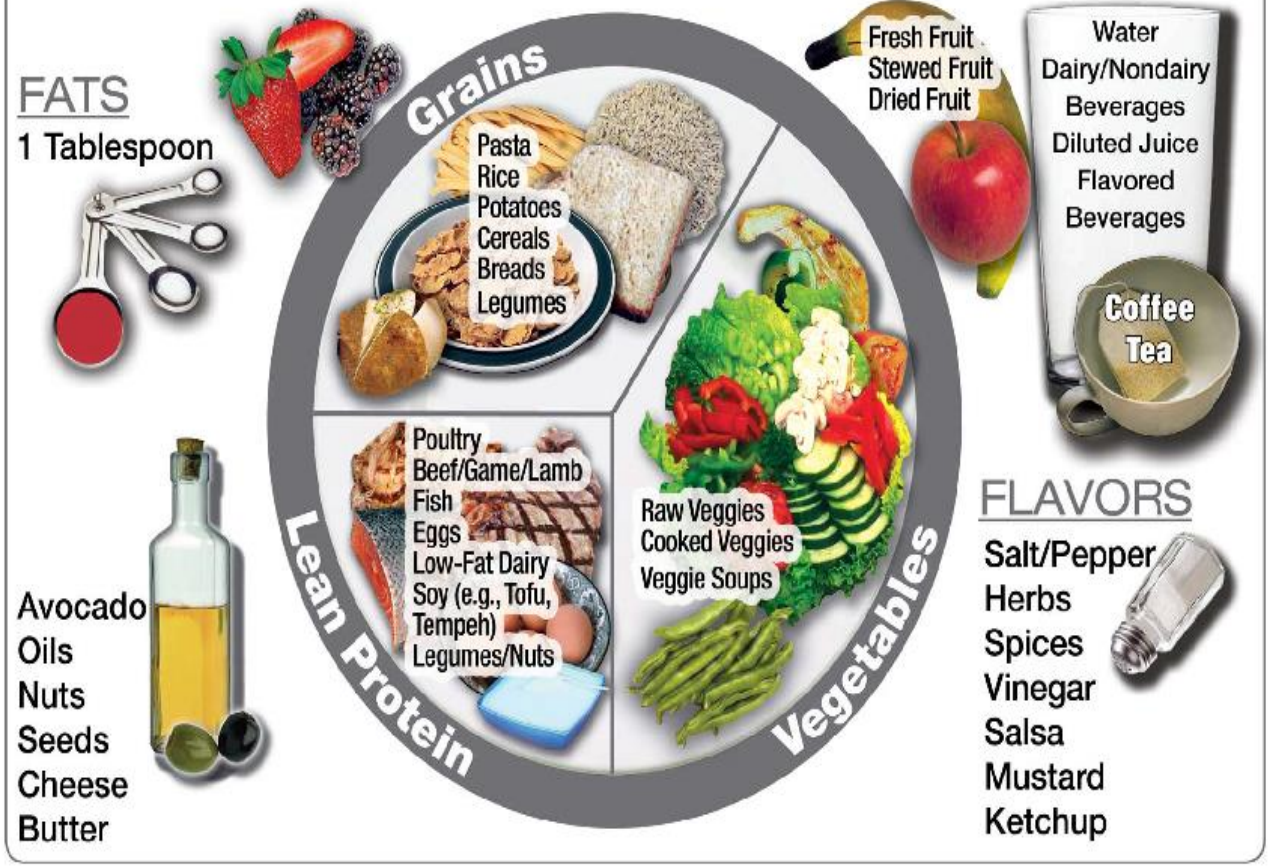
ATHLETE'S PLATE

MODERATE TRAINING:



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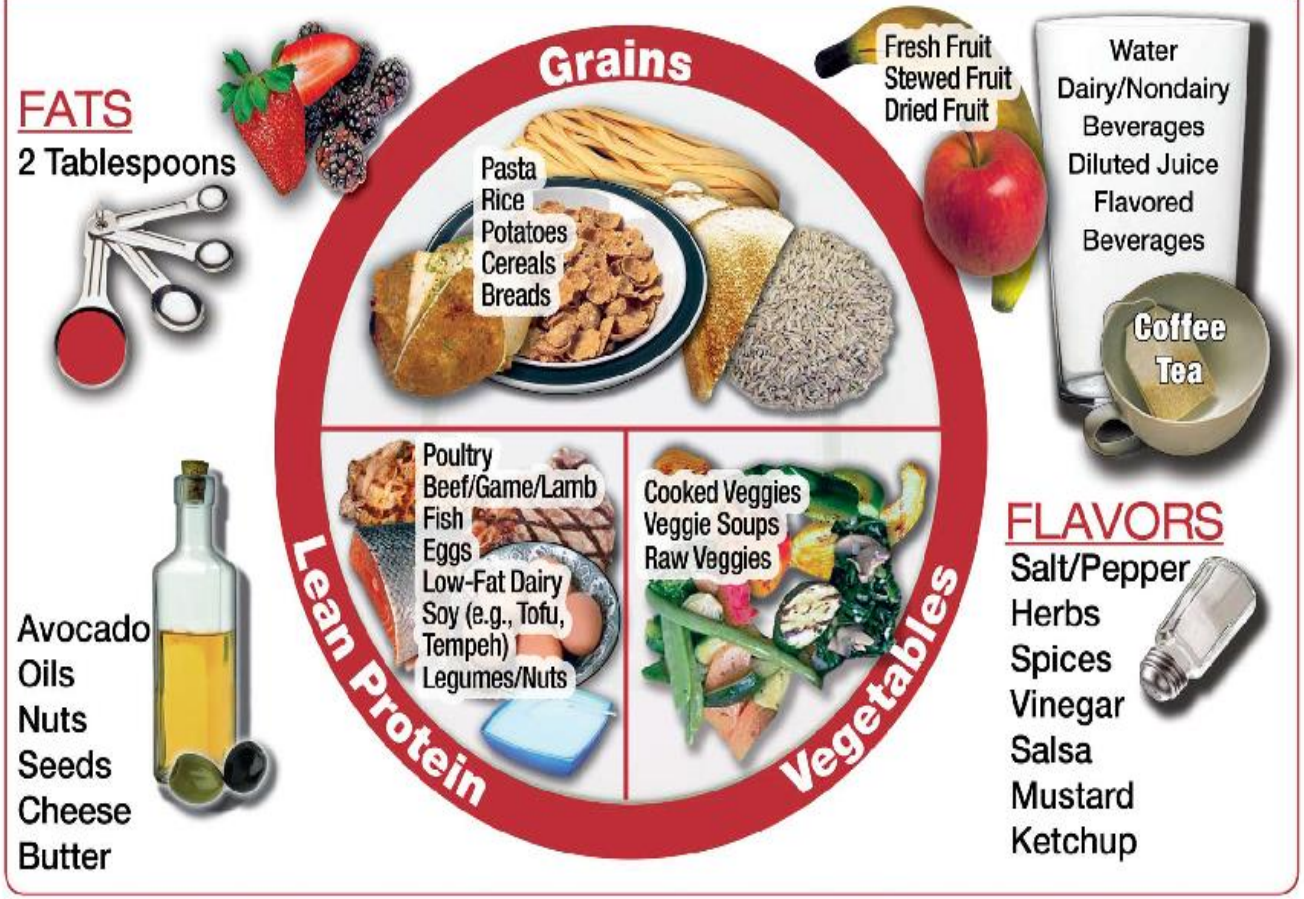
ATHLETE'S PLATE

HARD TRAINING / RACE DAY:



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How do we measure our success?

The ultimate goal is winning, but we can measure our contribution by analyzing…

1. Changes in Body Composition
   seasonally, annually, career

2. Rate of illness and overtraining

3. Anecdotal evidence – what choices are they making?

Continuing Challenges

- Life Skills
  - Some do not know how to take care of themselves
    - Cooking
    - Shopping
    - Budgeting
    - Planning Ahead

Our Successes

- Developed a Sports Nutrition Team that includes the SAAC president, a dietician, an ATC, and a S & C coach

- The “team” met with the catering director and he agreed to make some changes
  - FOOD BAR will be expanded to replace Denny’s
  - It will have a rotating menu that will be posted in the weight room. SN team will set the menu.
  - The price will be determined by weight, but it will be capped.

Our Struggles

We need more staff

We need more money on the meal plan

We need “training table”

Tips

The entire Athletic Department needs to take ownership in the plan.

Challenge yourself to plan 3 meals and 3 snacks in a collegiate setting. Where did you struggle?

Work Backwards. Start with the desired result and plan how to get there.

Thank You

Steven.orris@nova.edu

Questions?