The Art of Defensive Eating: How to Build a Winning Nutrition Plan

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Nutritionist, Lown Cardiovascular Center
Outline

- Balanced eating
- Connection between nutrition & prevention
- Food industry dynamics
- Goal setting
- Resources, Q&A
America’s Challenging Food Environment
America’s Challenging Food Environment

Prevalence of Self-Reported Obesity Among U.S. Adults
BRFSS, 2011

Cdc.gov
Food Politics: The US Farm Bill
Balanced Nutrition for Prevention

• Emphasizes fruits, vegetables, whole grains, legumes, Omega 3 rich foods, lean protein sources and hydration

• Packed with phytonutrients

• Portion control and mindfulness
Balanced Nutrition for Prevention

- 65% of adults are overweight or obese
- Only 6% of Americans identify being overweight or obese as a risk factor for cancer
- Fat cells act like “hormone pumps” secreting hormones and growth factors into the bloodstream
- Inflammation & insulin resistance promote cell growth & reproduction; greater opportunity for cancer
- Getting closer to a healthy weight is a priority
- Choices impact chances
Nutrition Priorities

- Nutrient density
- Nutrient timing
- Recovery strategy
- Food-first approach
- Ownership
- Individualization
- Practicality
- Mindfulness
- Resourcefulness
- 70/30 or 80/20 vs “all or nothing” approach
- Consistency
# Nutrient Basics

<table>
<thead>
<tr>
<th>Carbohydrate 4 calories per gram</th>
<th>Energy source from starch, sugars and glycogen</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Glucose is the MAIN SOURCE of fuel for muscular activity</td>
</tr>
<tr>
<td>Protein 4 calories per gram</td>
<td>Energy source if carbs are depleted</td>
</tr>
<tr>
<td></td>
<td>Deliveres essential amino acids</td>
</tr>
<tr>
<td></td>
<td>Aids new tissue development</td>
</tr>
<tr>
<td></td>
<td>Maintains existing tissue</td>
</tr>
<tr>
<td></td>
<td>Helps transport of vitamins, minerals and fat to and from cells</td>
</tr>
<tr>
<td>Fat 9 calories per gram</td>
<td>Delivers fat-soluble vitamins</td>
</tr>
<tr>
<td></td>
<td>Delivers essential fatty acids</td>
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<tr>
<td></td>
<td>Energy source for low intensity exercise</td>
</tr>
<tr>
<td></td>
<td>Satiety</td>
</tr>
<tr>
<td>Fluid</td>
<td>Helps regulate heart rate during exercise</td>
</tr>
<tr>
<td></td>
<td>Replaces carbs and electrolytes</td>
</tr>
</tbody>
</table>
Interested in eating better?

nourish

what is healthy eating?

6 Key Messages
CHOOSE FOODS CLOSE TO THEIR NATURAL FORM

- Make half your plate fruits and vegetables
- Get your calcium-rich foods
- Drink water instead of sugary beverages
- Make at least half of your grains whole
- Go lean with protein
Nourish: Lifestyle vs. Diets

**Healthy Eating Includes All Foods**

- **Balance**: Choosing those foods with more nutritional value most often.
- **Variety**: Selecting an array of foods among and within food groups.
- **Moderation**: Adjusting the portion size based on the nutritional value.
Aim for 5-10 servings of fruits & vegetables each day

- 1/2 cup cut, cooked or sliced fruit or vegetable
- 1 cup of leafy greens, berries
- 1 piece of medium-sized fruit
- 1/4 cup of dried fruit, 6 oz. 100% juice
Power of Phytonutrients
If a fruit or vegetable has a strong taste or smell, it’s probably packed with antioxidants!

If it stains your shirt, it’s definitely packed with antioxidants!
Organic for some

ewg.org
• Combination of sugar, fat & salt = synergistic bang, first in parts of the brain that register pleasure, then in the gut

• ‘Caveman stuff’ when we learned how to eat big calorie foods to survive

• Addictive?

• Processed food industry prefers ‘craveability’

• Limit yourself to 2 Oreos? ‘The road to @&% is paved with good intentions’.

Why Humans Like Junk Food by Steven Witherly
Mindless Eating: Bad popcorn in big buckets

- Packaging & container size are powerful

- Theatre goers randomly given medium or large containers of free popcorn, either fresh or stale (14 days old)

- Consumption & perceived taste were measured

- Fresh: ate 45.3% more popcorn when given in large container

- Stale: ate 33.6% more popcorn when given in large container, despite disliking the food

- Large containers lead to overeating, even non-palatable food

Dr. Brian Wansink, Cornell University, Food & Brand Lab
Here's something else to munch on:
"People tell us that the baby carrots in the new packaging taste better. Isn't that amazing?"
“People need to know things they never knew they never knew.” David Katz, MD

Sodium content per 100 calories?
Sodium content per 100 calories?

- CAPE COD Potato Chips: 73 mg
- Fritos: 100 mg
- Wheat Chex: 233 mg
- Yoo-hoo: 131 mg

“People need to know things they never knew they never knew.” David Katz, MD
Estimates suggest a 50% reduction in salt consumption (to 1500 mg) would save 150,000 lives & $26 billion in one year.

The salt shaker on the dinner table isn’t the culprit.

Sodium added to processed foods is used for taste, preservatives, anti-microbials, leavening agents and to maintain texture and consistency.

1 teaspoon of salt = 2300 mg of sodium

National Heart, Lung and Blood Institute
Trans fats: Stay away

Manmade fat to help extend shelf-life

Increases LDL (bad) cholesterol and lowers HDL (good) cholesterol

Aim for zero grams

Look at ingredients list

Avoid

Partially hydrogenated

Nutrition Facts
Serving Size 1 cup (200g)
Servings per container 2

<table>
<thead>
<tr>
<th>Amount per serving</th>
<th>% Daily Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories 220</td>
<td>18%</td>
</tr>
<tr>
<td>Calories from Fat 100</td>
<td>15%</td>
</tr>
<tr>
<td>Total Fat 12g</td>
<td>18%</td>
</tr>
<tr>
<td>Saturated Fat 3g</td>
<td>15%</td>
</tr>
<tr>
<td>Trans Fat 2g</td>
<td>10%</td>
</tr>
<tr>
<td>Cholesterol 30 mg</td>
<td>10%</td>
</tr>
<tr>
<td>Sodium 235 mg</td>
<td>10%</td>
</tr>
<tr>
<td>Total Carbohydrate 16g</td>
<td>5%</td>
</tr>
<tr>
<td>Dietary Fiber 5g</td>
<td>20%</td>
</tr>
<tr>
<td>Sugars 4g</td>
<td></td>
</tr>
<tr>
<td>Protein 6 g</td>
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</tr>
</tbody>
</table>

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.
The more you do to food, the less nutrition it has.
The more you do to food, the less nutrition it has

Pay more attention to the ingredients section on a food label. If something sounds like a chemical, it probably is.

**Snack Size Fruit & Walnuts:**
Apple Slices and Red Grapes: Apples, calcium ascorbate (a blend of calcium and vitamin C to maintain color), red grapes. Vanilla Lowfat Yogurt: Cultured pasteurized Grade A reduced fat milk, sugar, food starch-modified, fructose, whey protein concentrate, corn starch, gelatin, natural (plant source) and artificial flavor, potassium sorbate (added to maintain freshness). Candied Walnuts: Walnuts (TBHQ and BHT added as a preservative), sugar, peanut oil, honey, salt, wheat starch, maltodextrin, xanthan gum, natural (plant source) and artificial flavor.
CONTAINS: MILK, WHEAT AND WALNUTS

MAY CONTAIN SHELL PARTS, PEANUTS AND OTHER TREE NUTS

NONFAT MAYONNAISE DRESSING: WATER, VINEGAR, MODIFIED CORNSTARCH, SUGAR, HIGH FRUCTOSE CORN SYRUP, SOYBEAN OIL*, CONTAINS LESS THAN 2% OF SALT, NATURAL FLAVOR, CELLULOSE GEL, ARTIFICIAL COLOR, XANTHAN GUM, EGG YOLKS*, MUSTARD FLOUR, LACTIC ACID, PHOSPHORIC ACID, CELLULOSE GUM, VITAMIN E ACETATE, LEMON JUICE CONCENTRATE, DRIED GARLIC, DRIED ONIONS, SPICE, YELLOW 6, BETA CAROTENE (COLOR), BLUE 1, WITH POTASSIUM SORBATE AND CALCIUM DISODIUM EDTA AS PRESERVATIVES. *TRIVIAL SOURCE OF FAT AND CHOLESTEROL. CONTAINS: EGG.
Look At Liquids

- Look at the numbers on the back of the label
- Total carbohydrate: 30 grams
- Sugars: 30 grams
- Serving Size: 2.5 in a 20 ounce bottle
Look At Liquids

- 30 grams x 2.5 = 75 grams carbohydrate
- 75 grams / 4 = 19 teaspoons of sugar per bottle
- 300 calories per bottle
Define A Drink

- 12 ounces of beer, 150 calories
- 5 ounces of wine, 100 calories
- 1.5 ounces of 80 proof spirits, 100 calories
- Crate & Barrel & others sell 20 ounce wine glasses
Portable Portions

* 3 x 3 sticky note is a perfect way to measure a serving of nuts
* 1 ounce of nuts
* .25 cup
* about 23 almonds
Eat Out Better

- Think ‘a la carte’, speak up. It never hurts to ask.
- Skip the bread, breadsticks & croutons if having carbs at the meal
- Ask for side portions of pasta, rice, potatoes on less active days
- Change the way you think about meat (strips of sirloin, diced prosciutto)
- Ask for an extra sides of steamed veggies, hold the butter
- Use olive oil & lemon juice or vinegar for salads
- Ask for lemon or lime slices for flavor
- Ask for no added salt, no MSG
- Try fresh fruit for dessert
- Choose between appetizers & desserts
- Have a snack before heading to the restaurant
**Eat Out Better**

- Be mindful of alcohol calories
- Skip salads at fast food places. Grab a few pieces of fruit at hotel or 7Eleven-type store to complement a fast food meal.
- Avoid ‘value meals’; sometimes less is more
- Choose thin crust pizza, extra sauce, light on the cheese, with grilled chicken, vegetables & a side of sliced vegetables (mushrooms, peppers).
- Burrito bowl vs. burrito
- Water with meals
Mindful eating vs. multitasking

- Turn the TV off while eating, 1 night per week
- Fork down between bites
- Distractions can add calories (not to mention the swaying power of food advertising)
Exercise is medicine

- Add 30 minutes of activity to your day
- Subtract TV time from your day/week
- Replace light/moderate activity with more vigorous activity twice/week
- Set very specific & realistic goals
- Daily activity, if not exercise
Vitamins/Supplements

- Buyer beware
- Herb and supplement makers ‘are under no mandate to accurately list the contents’
- NO FDA APPROVAL
- Advertising vs. clinical trials
- May interfere with medications
- Open communication is key
What do I eat?
When do I eat it?
## Meal timing

<table>
<thead>
<tr>
<th>Timing</th>
<th>Nutrients</th>
<th>Why</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-Exercise</strong>&lt;br&gt;30 minutes before</td>
<td>Carbohydrates&lt;br&gt;Easy to digest&lt;br&gt;Low in fiber</td>
<td>Muscle glycogen stores are limited&lt;br&gt;Quick energy</td>
</tr>
<tr>
<td><strong>During Exercise</strong>&lt;br&gt;(if &gt; 60 or 90 minutes)</td>
<td>Carbohydrates alone or with a small amount of protein/fat&lt;br&gt;Easy to digest&lt;br&gt;Low in fiber</td>
<td>Maintain blood glucose levels&lt;br&gt;Reduce reliance on storage form of energy (muscle &amp; liver glycogen)&lt;br&gt;Protein (small amounts only) extends energy from carb alone</td>
</tr>
<tr>
<td><strong>Immediately After Intense Exercise</strong>&lt;br&gt;(within 30 minutes)&lt;br&gt;RECOVERY WINDOW</td>
<td>2:1 to 4:1 ratio&lt;br&gt;Carbs: Protein&lt;br&gt;Carb: Protein combos</td>
<td>Greater rate of muscle glycogen re-synthesis than carbs alone&lt;br&gt;Helps with muscle tissue repair</td>
</tr>
<tr>
<td><strong>After Exercise</strong>&lt;br&gt;(1-3 hours)&lt;br&gt;Recovery Window</td>
<td>Balanced Meal: Carb (fiber rich), Protein, Vegetable/Fruit, Healthy Fat, Fluid</td>
<td>Optimize protein re-synthesis &amp; muscle glycogen re-synthesis</td>
</tr>
</tbody>
</table>
Portable snacks

- FRESH FRUIT & NUTS
- FRESH FRUIT & SEEDS
- GREEK YOGURT
- CUT VEGETABLES & HUMMUS
- APPLESAUCE CUPS
- STRING CHEESE
- PEANUT BUTTER & CRACKERS
- JUSTIN’S NUT BUTTER PACKET & FRUIT
- TART CHERRY JUICE
- CHOCOLATE MILK
- COCONUT WATER
- FOOD SHOULD TASTE GOOD CHIPS
- FRUIT & EDAMAME
- DARK CHOCOLATE >70%
- KIND BAR, CLIF MOJO BAR, VEGA SPORT PROTEIN BAR, VEGA VIBRANCY BAR, UNREAL CHOCOLATE
- VEGA SPORT RECOVERY ACCELERATOR, ACCELERADE
Energy will come from good foods and consistency of meal pattern

Limit caffeine after 3-4 pm or noon if caffeine-sensitive
Carbonated water, Glucose, Citric Acid, Natural Flavors, Taurine, Sodium Citrate, Color Added, Panax Ginseng Root Extract, Caffeine, Sorbic Acid, Sucralose, Benzoic Acid, L-Carnitine, Niacinamide, Acesulfame Potassium, Sodium Chloride, Glucuronolactone, Inositol, Guarana Seed Extract, Pyridoxine Hydrochloride, Riboflavin, Maltodextrin, Cyanocobalamin.
“Sleep has effects on cognition, your attention, your memory, your mood, your metabolism, your appetite — it affects so many different things.”

Emma Adam, Northwestern professor, expert on sleep
Trends: Vegan & Vegetarian

- Plant-based diets are growing in popularity
- Must be well-planned
- Different pathway to the same destination
- Cutting out meat & dairy without introducing plant-based substitutions can be a problem for athletes
- Whole foods vs. processed versions
- Reduce reliance on processed soy protein
## Key nutrients: Plant-based sources

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Protein</strong></td>
<td>hemp, nuts, whole soy foods, legumes, grains, vegetables</td>
</tr>
<tr>
<td><strong>Iron</strong></td>
<td>spinach, hemp, legumes (split peas), blackstrap molasses, fortified cereals, chlorella (pair with Vitamin C rich source)</td>
</tr>
<tr>
<td><strong>Zinc</strong></td>
<td>pumpkin seeds, nutritional yeast, hemp</td>
</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>leafy green vegetables, unhulled sesame seeds, tahini, figs, instant oatmeal, tofu, fortified juice</td>
</tr>
<tr>
<td><strong>Vitamin D</strong></td>
<td>sunlight exposure, nutritional yeast, fortified cereals, supplements</td>
</tr>
<tr>
<td><strong>Vitamin B12</strong></td>
<td>chlorella, miso, nutritional yeast, fortified cereals, supplements</td>
</tr>
</tbody>
</table>
Trends: Gluten Free & Paleo

- GF excludes wheat products & many processed foods

- Celiac disease & gluten intolerance (7% of population)

- Paleo excludes grains, legumes, excessive sugar, excessive salt or dairy products

- 20-50% of runners suffer GI problems, GF & Paleo might lessen stress on digestive track

- Is it GF or Paleo that’s working or is it just paying attention to eating quality foods?

- Eating clean?

Boston Globe Magazine, 3.31.2013
The Paleo Lifestyle has become an industry unto itself. Research hasn’t caught up with some of its acolytes’ most ambitious assertions, but what the movement lacks in double-blind studies it makes up for with rabid testimonials.

Nick Heil, Outside Magazine, June 2013
Is sugar the enemy? The donut vs. the orange

- Donut: 200 calories, 10 grams of sugar, no fiber, no phytonutrients
- Orange: 62 calories, 12 grams of sugar, 3 grams of fiber, 170+ phytonutrients
Trends: Real Food

Apples & Cinnamon (HOT)

Exercise Hydration Mix

$19.50

Title

One Pound Resealable bag

add to cart

Who ever heard of a hot sports drink? Nobody, that’s who. And that’s exactly why we made one.

It’s pretty simple: Whether it’s the hottest day of the year or one of the coldest, if you’re exerting yourself, you’re sweating and losing both water and electrolytes that need to be replaced. And even though our regular Exercise Mix flavors work perfectly fine in any conditions, we thought it would be nice to have something yummy AND warm to drink for those days when we’re working hard in the cold.

The formula for our new Apples & Cinnamon sports drink is the same as our other flavors— the only difference is that it tastes really great when you mix it with hot water instead of cold. (It tastes pretty darn good if you mix it with cold water, too.)
“What you call your diet or how you label it is far less important than the ingredients you use to build it.

Like proper training, the inherent quality & diversity of what we choose to eat is key to optimal health & performance.”

Biju Thomas & Allen Lim
authors of FeedZone Portables
Tech savvy

Fooducate

Wonderful Pistachios, Roasted & Salted

- Grade: A
- Calories Per Serving: 160
- 91% like this

For dieters: FoodPoints value is 5
This product is minimally processed
Learn about Pistachios

1 User comment. Tap to add yours

Want to know if this product is gluten free?
Get ALLERGY TALK by Fooducate

MealSnap

Dinner
Sausage Lasagna

ESTIMATED CALORIES: 584 - 874

Evening Snack
Orange

- 50 - 76 CALORIES

Orange Juice & Vodka

- 68 - 102 CALORIES
Tech savvy

LoseIt

Budget: 1,240
Food: 1,057
Exercise: -436
Net: 621
Under: 619

Breakfast: 278
- Vega One Nutritional Sh... 138
  1 Scoop
- Banana, Small 45
  ½ Each
- Oil, Avocado 21
  ½ Teaspoon
- Drink, Non-dairy 39
  8 Fluid ounces
- Yogurt, Plain 35
  ¼ Container

Lunch: 268
- Tortilla Strips 141
  13 Pieces
- Soybeans, Edamame 127
  ½ Cup

Dinner: 315
- Chicken, Breast 155
  5 Ounces

Fig

your activities

- breathe deeply
  3 times every day
- spend time in nature
  7 times every week
- perform an act of gratitude
  1 time every day
- watch the sunset
  3 times every week
- eat bright colors
  3 times every day
- eat slowly
  3 times every day
Tech savvy
**Think 5. Every Nutrient. Every Meal.**

<table>
<thead>
<tr>
<th>Five Fingers</th>
<th>A balanced meal has one item from each category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Fruit/Vegetable</td>
<td><strong>2</strong> Carbohydrate*</td>
</tr>
<tr>
<td>fresh fruits</td>
<td>plain oatmeal, high fiber/low sugar cereal</td>
</tr>
<tr>
<td>frozen fruits</td>
<td>100% whole wheat bread, English muffin, pita, sandwich thin, crackers</td>
</tr>
<tr>
<td>dried fruits</td>
<td>100% whole wheat waffles or pancakes, “skinny” or “scooped- out” bagels</td>
</tr>
<tr>
<td>frozen vegetables</td>
<td>brown rice, wild rice, whole wheat pasta, buckwheat (soba) noodles</td>
</tr>
<tr>
<td>fresh vegetables</td>
<td>quinoa, couscous, bulgur, teff, farro, wheat berries, spelt berries, rye berries, millet, kamut berries, amaranth, barley</td>
</tr>
<tr>
<td>fresh squeezed juice diluted with water or seltzer</td>
<td>potato, sweet potato, yam, turnips, winter squash, peas, corn, polenta, yucca, plantains</td>
</tr>
</tbody>
</table>

*Look for at least 4 grams of fiber per serving.

© The Plate Coach
Powerful Plate: Healthy Weight

- 25% Carbohydrates
- 25% Lean Protein
- 50% Fruits & Vegetables
Powerful Plate: Less Active

75% Fruits & Vegetables

25% Lean Protein

© The Plate Coach
Choose colorful fruits & vegetables
Flavor food with herbs & spices
Drink green, black & herbal tea
Add nuts & seeds to cereals & salads
Choose olive oil, nut butter, avocado, hummus & coconut
A little goes a long way

adapted from FuelingTactics®
Seek out fruits & vegetables
Make plant-based a priority
2

Upgrade Your Carbohydrates

Muscle Energy & Recovery

Adjust carbohydrate portions based on activity level

More exercise, more carbs     Less exercise, less carbs

Choose high fiber sources 2-4 hours before or after exercise for long lasting energy (slow digesting)

Choose low fiber sources for quick energy right before, during & after long or intense workouts (quick digesting)

Primary energy source for quality work

adapted from FuelingTactics®
Be aware of ‘health halos’

Granola: 500 + calories in large bowl
Diversify Your Protein Sources

Muscle Repair & Growth

Choose lean animal protein sources (3 grams of fat or less per 7 grams of protein)

Make plant-based protein sources a priority

Protein is slow to digest so go easy right before a workout

More protein does not equal more muscle
You need hard work & a balanced diet

adapted from FuelingTactics®
Food environment “flow”
Plant Strong = Boston Strong
Fries are on the menu
What’s your nutrition mantra?

Very Special Thanks

Elise Phillips, Director, Office of Health Promotion
Betsy Cook, Office of Health Promotion
Sheila Tucker, Nutritionist

BC, you guys are LUCKY!
BC Office of Health Promotion

Request an iHP

INDIVIDUAL HEALTH PLAN

Individual health plans and conversations will help you to develop personal goals and strategies to live by: plan your academics, plan for health!

Complete the following form to schedule your Individual Health Plan

- First Name
- Last Name
- Class Year
- Email
- Referred by

Please select the areas below that you are interested in:
- Alcohol and Drug Awareness
- Body Image
- Healthy Eating
- Exercise
- Healthy Relationships
- Stress Management
- Time Management

Office of Health Promotion

Your source for Boston College health tips, programs & events

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