Nutrition and Training

Pointers on healthy living in grad school

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Outline

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- Workout
  - Beginner
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Goal Setting

- Needs to be done before starting out.
- Why do you want to change your eating habits or start working out?
- There are many benefits of healthy eating and working out: preventative, quality of life, aesthetic.
- Set realistic, challenging, concrete goals, with emotional content.
  Eg. I am gaining 10 pounds by December to surprise my family during Christmas.
- Write it down where you can see it every day.
- Sounds cheesy but serves as a constant aid to stay motivated.
- Reward yourself some way when you achieve it.
- Achieving goals feels amazing! One of the few venues of positive reinforcements in grad school life.

Nutrition: Beginner

- Reduce food with low nutrition value, like chips, cookies, etc.
- Employ substitutions (processed food by natural food). Eg.:
  - Chips → Baked, seasoned veggies.
  - Soda → flavored teas, infused water.
  - Ice cream → plain greek yogurt with fruits
- Pack snacks: roasted/spicy nuts, fruits, trail mix
- Conscious when eating out
  - Adjectives to avoid: creamy, buttery, pan-fried, sautéed
  - Instead: grilled, baked, broiled, steamed
  - Split the entrée
- Work on instilling consistency and good habits

Nutrition: Intermediate

- Need to figure out energy in vs. energy out.
- Estimate calories consumed using nutrition labels and internet (much easier for homemade meals). It's a one time effort, that pays off big!
- Example 1: chicken salad (you might want to grab a scale):

Ingredient	Quantity	Calories	Protein (gm)	Carbs (gm)	Fats (gm)
Spinach	2 cups (60 gm)	14	1.8	2.2	0.2
Roasted Chicken	120 gm	190	35	0	4
Avacado	1/2 fruit (70 gm)	95	1.4	6	10
Greek Dressing	1 tbps (15 gm)	77	1	0.3	8.4
TOTAL		376	39.2	8.5	22.6

- Example 2: Oats

Ingredient	Quantity	Calories	Protein (gm)	Carbs (gm)	Fats (gm)
Oats	40 gm	150	5	27	3
Banana	1	105	1.2	26.7	0.6
Whey	1 scoop (30 gm)	120	24	3	1
Walnuts	15 gm	90	4	2.5	7.5
TOTAL		465	34.2	59.2	12.1

Nutrition: Intermediate

- Estimate Basal Metabolic Rate (BMR), using Harris Benedict equation:
  - BMR (Men) = 88.362 + (13.397 x weight in kg) + (4.799 x height in cm) - (5.677 x age in years)
  - BMR (Women) = 447.593 + (9.247 x weight in kg) + (3.098 x height in cm) - (4.330 x age in years)
- Me: 29 y/o guy, 154 lbs (70 kg), 5’9.5” (176 cm), BMR = 1706 calories
- Find your Activity Factor (AF):

Activity Level	AF
Sedentary (little or no exercise, desk job)	1.2
Lightly active (light exercise/sports 1-3 days/wk)	1.375
Moderately active (moderate exercise/sports 3-5 days/wk)	1.55
Highly active (hard exercise/sports 6-7 days/wk)	1.725
Extremely Active (hard daily exercise/sports & physical job or 2 X day training, etc.)	1.9

- Daily caloric need = BMR x AF
- Me: Caloric need = 1706 x 1.55 = 2644 calories (needed to maintain my weight)

Nutrition: Intermediate

- Depending on the goal, you might need more or less calories.
- Heuristic: fat loss (↓ 15-20%), mass gain (↑ 15-20%).
- Next consideration: macronutrient ratio- %Protein:%Carbs:%Fats.
- Differing philosophies, individual differences.
- Heuristic starting point: 30:50:20.
- For me to maintain (~2600 calories) - 780P:1300C:520F

Nutrient (1 gm)	Calories
Protein	4
Carbohydrates	4
Fats	9
Alcohol	7

- For me - 195 gm protein, 325 gm carbohydrates, 58 gm fats.
- You have a good starting point after these short calculations!

Nutrition: Intermediate

- Heuristic for building a meal:
    1. Choose some lean protein, carbs, fats, seasonings/spices.
    2. Prepare any way you like. Avoid excessive oil, breading, etc.
    3. Adjust proportions to hit your calorie and macro goal.
- **Protein**: lean meat, seafood, eggs/ egg white, low fat dairy.
- **Carbs**: veggies, fruits, whole grains, WG pasta, bread, cereal, etc.
- **Fats**: nuts/seeds, nut butters, avocado, olive/canola/flaxseed oil, etc.
- Best way to go about it: batch cooking!
- Most cooked meats and grains stay good up to a week in the fridge!
- Grill your favorite meat, veggies and cook any grains or pasta on a weekend, so preparing a meal later is a few min job.
- Indulge once in a while. Practice moderation.

Workout: Beginner

- If you haven't thought much about working out, or taken a long break.
- Take stairs.
- Walk or bike more.
- Introduce some cardiovascular and resistance training.

- Cardio: a rhythmical activity, involving large muscle groups (like legs or back), that can be sustained for a duration.
- Resistance training: working against resistance provided by body weight, free weights, pulleys, bands, etc., usually in shorter bursts.
- Simple exercises: bodyweight push-ups, lunges, crunches
- Make a small commitment: 1 workout a week
- Build it into your schedule. Eg. run 15 mins after AI seminar.

Workout: Intermediate

- If you know the basics and workout somewhat regularly.
- Cardio: mix up the intensity. High Intensity Interval Training (HIIT). Diversify to combat boredom.
- Unless it's for a specific goal, don't get caught into cardio alone.
- Keep it simple to begin with: 30-45 minutes of resistance training, 15-20 mins cardio.
- Focus on major (big) muscle groups. Others get worked automatically.

Workout: Intermediate

- Ready to delve a little deeper!
- Different variables to consider when structuring workout:
  - **Frequency**: how often you train
  - **Split**: which muscle groups you train in a particular workout
  - **Movement choice**: specific exercise you perform for a muscle group
  - **Intensity**: how much resistance you use
  - **Repetitions**: how many times you perform the movement
  - **Tempo**: how fast you perform the movement. Encode as: (time to lower weight, pause, time to lift weight, pause).
  - **Sets**: clusters of repetitions separated by rest
  - **Rest**: how long you wait between sets
- These will depend on level of experience, sometime on goals.

Workout: Intermediate

Variable	Beginner	Intermediate
Frequency	1-2 times/week	3-5 times/week
Split	1 day (full body workout)	2-3 days (3-4 muscle groups/workout)
Movement Choice	Simple (single joint, assisted)	Compound (multi-joint, free weights)
Intensity	Low (focus on learning, habit forming)	High (focus on steady progress)
Repetitions	8-12/set	1-15/set
Tempo	Moderate (eg. 2020)	Slow (eg. 3232) to Explosive (eg. 2011)
Sets	2-3/movement (exercise)	2-10/movement (exercise)
Rest	45 secs - 1 min	30 secs - 3 mins

- When starting out, err on the side of caution, taking things slow.
- Try to learn the movements. Pay attention to mind-muscle connection (using chest muscles more during push-ups).
- Once in the groove, experiment with the variables.
- When running experiments, change one variable at a time.

Workout: Intermediate

- Few more things to keep in mind.
- Warm-up (brisk walk, some cardio) and stretch (static, dynamic, roll).
- Warm-up sets with 30%-50% of planned weight.
- **Progressive overload**: extremely important. Change variables when accommodation happens to keep workout challenging.
- Don’t fall for weird myths or bro-science: “high reps for definition brah”, “gotta pound shakes to get gainz”, “follow the Arnold Blueprint to get yoked”
- Avoid falling for common excuses: “lifting weights will make you too bulky”, “when you stop lifting, muscles will convert to fat, so why bother”, “resistance training is boring”, “it's too time consuming”, “it's for meatheads”.

Workout: Intermediate

- Heuristic for building a workout:
    1. Pick the frequency, split, #sets, #repetitions, tempo and rest based on your experience, goals and time constraints.
    2. Choose movements for the major muscle groups.
    3. Figure out a challenging intensity (hit and trial).
    4. Implement some form of progressive overloading. Eg. increase #reps each workout by 1.
- Example beginner workout: 2 days/week, full body workout, 2 sets, 10 reps (often abbreviated 2x10)

Exercise	Exercise
Lunges (quadriceps)	Lateral raises (shoulder)
Leg curls (hamstrings)	Dumbbell curls (biceps)
Machine pec flys (chest)	Rope push-downs (triceps)
Seated rows (middle back)	Standing calf raises (calves)
Lat pull-down (lats)	Weighted crunches (abs)

Charting Progress

- Track workouts (paper, apps).
- Indicator of progress. Source of pride!
- Basic idea: should be moving forward towards goals.
- Objective ways: body composition, measurements, weight, clothing size, progress pics
- Subjective ways: how you feel, how you think you look in the mirror, perceived attentiveness/energy levels
- Biggest mistake: sticking with the same plan for years on end, when progress has ceased.
- If progress stalls (no change in 1-2 weeks), change some variables in your workout and/or nutrition plan.

UCSD Resources

- Gyms: RIMAC, Main gym, Canyonview
- Free Graduate Wellness Program
- Nutritionist open hours
- Personal trainer open hours
- Host of friendly staff
- Free assessments (strength, endurance, flexibility, composition).
- Free fitness classes at The Zone, Price Center
- Functional Movement Screening, body composition at EPARC.
- Subsidized rec classes

Other Resources

- Books:
  - “Burn the fat, feed the muscle” by Tom Venuto (highly recommended)
  - “Becoming a supple leopard” by Kelly Starrett and Glen Cordoza
  - “Starting Strength” by Mark Rippetoe
- Online:
  - bodybuilding.com (requires filtering but lots of good information)
  - examine.com (consolidation of literature on supplements)
  - thecaloriecounter.com (or similar ones for getting calorie estimates)
  - scholar.google.com (look up papers and sift through bro-science)