

**College Life and Attaining Muscle Mass
Through Protein-based Diet and Resistance Training**

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WELL 101: Principles of Wellness I

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Finding the perfect college routine through a semester can be difficult, especially when one attempts to incorporate classes, useful study-time, extracurricular activity, and lifestyle. One particular lifestyle goal many set out to achieve in college is a balance of work, life, and self-interest. For the purposes of this behavior change plan, I will establish a fitting academic/work/lifestyle schedule, adhere to a protein-based diet, and devise an optimal resistance training routine for attaining muscle mass. My previous behavior, which was simply not working out or exercising regularly, is the subject of change for this action plan. I will begin by devising a spring semester day-to-day schedule that incorporates resistance training along with the academic, labor, and extracurricular commitments I have. Next, I will confer with several sources to create a protein-based meal plan and to develop a holistic training program for the attaining of muscle mass. After the first week of diagnostic training, I will begin the three week training periods where I will assess gradual improvement and gain of body weight. Several observations will be made so as to assess difficulty, endurance, fatigue, etc. At the end of each three week period (until the end of semester), I will assess the recorded body weight, muscle mass, and level of resistance training as a relationship of protein consumption and effort inputted into behavior change plan. The initial quantities are 126.4 lbs. total body mass, 17.6 lbs. fat mass, 13.9% body fat, approximately 104.2 lbs. muscle mass, and 82.4% muscle mass for a standard male, age 19, and 5ft. 5in. (165cm). The end goal is for 130-140 lbs. total body mass, 17.6 lbs. or less fat mass, and 110 lbs. or greater muscle mass by the end of the spring semester.

My student schedule for the Spring Semester consists of 4.5 course credits and a primary (and perchance a secondary) labor position. With these established commitments as a Berea College student, I most likely will have to ward my resistance training (RT (commonly strength

training)) in between a 6:00pm to 7:30pm time period after I eat dinner and before I begin my evening study for weekdays. Weekends have much more flexibility, but I will reserve a designated time-frame for RT between 2:30pm to 3:30pm after I eat lunch and before my weekend study endeavors. All times, however, are not affirmative and may be altered due to new knowledge of extracurricular timeframes, which could not be considered yet.

For a meal plan, which must take into account the college's available food items for the spring semester, I will attempt to incorporate a viable plan that fits the nutritional requirements for attaining sufficient muscle mass and retaining the muscle gained. Certain research has shown that "Dietary protein requirements in healthy adults (≥ 19 years old) are dictated largely by body mass and lean body mass, as well as net energy balance and physical activity," (Carbone & Pasiakos). Furthermore, it is suggested that, for muscle mass to begin, the protein intake must exceed the Recommended Dietary Allowance (RDA), which is defined as the minimum amount needed just to retain muscle mass. Considering that the RDA is 0.8 grams per kilogram of body mass per day (g/kg/d), and that I am approximately 57.33kg body weight, it can be deduced that I would need to consume greater than 45.86 grams of protein per day to maintain any attained muscle mass. Moreover, for intended muscle hypertrophy, it is suggested that the protein intake is anywhere from 1.2 - 1.6 g/kg/d, which is anywhere from 68 - 103 grams of protein consumed per day. For the purposes of beginning, I believe I will attempt to log 75 - 85 grams of protein in order to attain my goal. It should also be noted, however, that, as a first-year undergraduate student, affording that much high-protein food will be difficult, hence there may be some inconsistencies.

Looking further into the specifics of foods that should be consumed, besides what is available at the college's dining hall, advice from Harvard Health suggests "you want to stay away from red and processed meat because of high levels of saturated fat and additives. Instead, opt for healthier choices, such as: 3.5 ounces of lean chicken or salmon (31 g and 24 g respectively); 6 ounces of plain Greek yogurt (17 g); 1 cup of skim milk (9 g); 1 cup of cooked beans (about 18 g)," (Harvard Health). With this in mind, I will attempt to shop for tuna or salmon at *Walmart* to at least attain a 20 gram serving of protein for Monday, Wednesday, and Friday—this would seem most affordable and efficient. Further independent research also suggests that the time in which one consumes high-protein foods can be optimized: protein consumption in a "skewed manner [potentiates]... muscle protein remodeling," (Moore & Philip). Specifically, evening heavy-protein meals are more beneficial than a morning heavy meal considering that "the ability of pre-sleep protein ingestion to enhance nocturnal rates of muscle protein synthesis as a means to promote tissue remodeling and growth," (Moore & Philip). I will definitely consider this when establishing a planned meal, by eating plenty of good meats and protein-rich foods in the evening,

Next, it is imperative that a good RT program is planned out in order to improve rate of muscle hypertrophy. As a general note, "Muscle hypertrophy occurs when muscle protein synthesis exceeds muscle protein breakdown and results in positive net protein balance in cumulative periods," (Krzysztofik et al.) which may have been intuitive with the previous RDA definition. Though, there is never one single way to maximize muscle hypertrophy: "With regard to RT, manipulation of its variables such as intensity and volume of effort, exercise order, number of performed repetitions and sets, tempo of movement, and the duration of rest periods

between sets and exercises and training status have been extensively explored and discussed to maximize muscle adaptations,” (Krzysztofik et al.). Hence, online search of an RT program, in which I may or may not manipulate, will aid my effort in increasing muscle mass. To pinpoint specifically the muscle groups I wish to apply effort, I will prioritize arms, shoulders, back, chest, and abdomen where I believe strength in general can be amplified. The measurements from novice to mastery will be gauged applying The American College of Sports Medicine (ACSM) recommendations of sets and intensity levels. After each three week training period, I will log my results of body mass, muscle mass, ACSM gauged-level intensity, and my protein intake through the period. All together, I believe there will be significant results.

One of the greatest challenges in my behavior change plan besides scheduling commitments is maintaining the will and motivation to adhere to a fixed protein meal plan and a certain level of intensity workout that is commonly uncomfortable to some. However, I have surmised that community support may be beneficial in seeking the motivation to improve oneself or to friendly challenge others. Since I personally own a *Fitbit*, research pertaining to the fitness devices claim that “access to personalized data on physical activity behaviors and the ability to track, compare, and monitor behavior has huge potential for impacting cognitions and emotions and, in turn, increasing levels of physical activity,” (Kerner & Goodyear). The literature has explained that communities with traceable fitness data (i.e. sleep, steps, intensity workout, etc.) are great comparable sets, when used for dual benefit, to motivate all parties in friendly competition of one another. I believe I will even use the *Fitbit* to calculate my steps, heart rate, and calorie burn as a supplement to the body mass data I intend to collect.

Altogether, my behavior change plan will definitely help me attain my goal of increased muscle mass and strength building through protein intake and RT workout. The meal plan for protein control may fluctuate due to an undergraduate's inability to ensure sufficient spending money for food and the college's dining hall's nutritional inconsistencies. Though, a perfect control for this plan is the RT workout, which will primarily focus on arms, chest, shoulders, back, and abdomen. My measurements for body mass will be taken through a regular scale and my muscle mass and segmental measurements will be calculated through the analytical scale. In the end, the ultimate goal is to increase muscle mass from 104.2 to 110lbs. total at the conclusion of the spring semester.

References

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