**Nutrition and Exercise**

Few individuals experience lightheadedness, sluggishness, or muscle cramps during a workout session. There are lots of different factors behind it but consuming the right pre- and post-workout meals can play a huge role in the workout performance and results. They help an individual to perform best and shape the results. Consuming pre-workout meals has a role in fueling the activity and giving the body what it needs to perform its peak. In order to do that, the body needs carbohydrates and protein.

Carbohydrates are the body's easiest wellspring of fuel. They are particularly significant for high aerobic exercise and intensive activities like heat exercises, running, powerlifting, and other high-speed extreme sports. The harder and longer the body is working, the more carbs it needs to continue onward (Ormsbee et al., 2014). There are two unique kinds of carbs, simple and complex, however, they have a distinctive impact on the body and its performance. Simple carbs are derived from simple sugars that are processed quickly, giving prompt energy. Examples incorporate natural products like bananas, apples, dried fruits, rice cakes, organic product juice, honey, and other high sugar food sources. Complex or slow carbs meanwhile are ordinarily derived from starchy, high fiber food sources that are slower to process thus making them an incredible source of long-lasting energy. Examples incorporate whole grains, oats, beans, lentils, broccoli, potatoes, and pasta. Since complex starches take more time to process, they ought to be consumed a few hours preceding one's workout. Simple starches, on one hand, can be devoured thirty to an hour preceding the workout (Rothschild et al., 2020). As a rule of thumb, one should not eat immediately preceding exercise, not exclusively would it be able to cause stomach discomfort, yet it likewise makes contending demands on the body if the stomach is attempting to process food while the muscle is performing. Depending upon the power and length of the workout, one must need to consume both simple and complex carbs. For example, if one is anticipating a long run and sprint session that can last for two hours, then, at that point that individual should fill his/her body with enough carbohydrates. In any case, assuming that the training lasts between 45 to an hour, then a little snack comprising of simple carbs is sufficient to fill the performance.

In addition to carbohydrates, a great amount of protein before the exercise particularly when the individual is doing weight training is practically important. When performing strength training, small tears are being made in the muscle filaments of a person. By devouring protein, the number of amino acids in the body increases thus fixing those microtears. It also regulates the lean mass, advances the building of muscle mass, and fuels strength training more productively. Some extraordinary pre-exercise snacks that incorporate an equilibrium of basic carbs and protein can be consumed. Supplements like caffeine and branched-chain amino acids or BCAAs can likewise be valuable prior to workouts. All can help in upgrading execution, further develop strength, decrease weakness, and increment muscle mass. Caffeine can be found in coffee, tea, etc. which has been displayed to further develop execution, increase strength and force, diminish exhaustion, and invigorate fat-burning. BCAAs then again are gathering of three fundamental amino acids, leucine, isoleucine, and valine, which can't be delivered by the body and should be consumed from food. It is perhaps one of the widely supplements consumed pre-and during training to help muscle development, improve practice execution, and decreased muscle soreness post-working out (Schoenfeld et al., 2017).

The principal reason for a post-exercise meal is to supply the body with all it requires, such as rehydration, repair, recharge, refuel, and recuperate. Like pre-exercise meals, the body needs both carbs and protein, however, the accentuation of post-exercise is on protein. Eating a high protein meal after practice assists the body with limiting muscle protein breakdown, invigorates protein synthesis which prompts an expansion in muscle tissue, renews muscle glycogen, diminish muscle irritation, and lessens stress hormones (Vliet et al., 2018). Within 30-60 minutes after the workout, the individual must immediately consume a post-workout meal. If this will not be followed, then the body will exhaust its reserves during the workout. It will also result in breaking down muscle in order to fuel itself. A protein shake is one of the supplements being consumed post-workout session since it is super convenient, has a fast post-workout recovery drink, a good balance of protein and carbs, and sometimes the appetite is suppressed following a high workout hence making liquid nutrition a more appealing option. However, this should not be the only option and it should not be replaced for real whole foods which consist of a balance of protein, starchy carbs, and healthy fats after the workout.

If the person is physically active and does intensive workouts, then a great portion of carbohydrates, good fats, and protein must be consumed pre-workout to sustain and get better performance during the activity. For post-workout, protein-associated foods are again important aside from the starchy foods. The body tolerates and processes carbohydrates most efficiently in the 3-hour window post-workout. Thus, it is the best window to eat starchier carbs since it will immediately replenish the glycogen stores which are used up during workouts. It will also improve the ability to bounce back and come back stronger for another session. For protein, 0.25 grams per pound depending on the target body weight must be consumed while 0.25-0.5 grams per pound must be consumed for carbohydrates. Still, the bottom line is that one needs both carbs and protein pre and post-workout for sustained and improved performance and better muscle recovery. There isn’t a one-size-fit solution when it comes down to having the right meal and timing. The individual must keep trying different meals and know the timing and see which fits his/her body based on the type of activity the person usually does. It is also important to remember that the pre- and post-workout snacks should be included as part of the total daily caloric intake. Lastly, staying hydrated and drinking lots of fluid before, during, and after exercising is important to properly fuel the body and achieve results.

# **References**

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