

## 10 Nutritional myths in Body Building

Over the last century bodybuilding has grown, not only in popularity but as a respective scientific study toward body augmentation. Along the evolution of the sport we have noticed trends come and go on multiple planes ranging from excessive calorie intake to destructive anabolic use. With growing knowledge in the scientific community toward biochemistry, opportunity to refine the game plan has never been as ripe! In order to fully appreciate how we can benefit from progressive technology let's first look at a few past myths that have dominated the community of bodybuilding.

### 1. Egg white and yolk exclusion:

The trend to exclude healthy egg yolk from the bodybuilder's diet came about during the initial discovery of heart disease and its association with cholesterol some 27 years ago. During initial findings of the relation cholesterol has with heart health, scientists deemed that dietary cholesterol was unhealthy and could cause the onset of heart disease; this concept however was flawed. The increase of endogenous cholesterol is primarily due to the body's inability to metabolise cholesterol due to excessive circulatory triglyceride levels, interestingly circulatory triglyceride levels are increased by elevated levels of blood glucose. With an increase of fat and sugar in our blood stream we will note impaired function of our endothelial cellular function. Endothelial cell function is primarily responsible for cholesterol metabolism, impaired function of our vascular endothelium will lead to increased concentration of unwanted LDL form cholesterol and reduced cardio protective HDL cholesterol within our physiology. Egg yolk however promotes the increase of HDL and lowers the onset of LDL cholesterol due to the high concentration of fat soluble super vitamins D and K. High intake of egg whites also reduces the energy mediated precursor vitamins Niacin and Riboflavin both of which are used in lactic acid metabolism through our KREBS cycle, this is due to the high concentration of avidin contained in egg whites. In short, consuming high volumes of egg white without the inclusion of healthy and fat egg yolk will reduce the likelihood of increased HDL and available nutrients for our KREBS cycle, a balanced intake of yolks along with whites will create a far more optimal hormonal and energy based physiology set to train harder and recover faster.

Below represents a table illustrating the differences in nutrient density between egg whites and egg yolks. One can clearly see the difference in concentration of cardio protective fat soluble vitamins between egg yolks and egg whites.

### **Nutrients: Egg Yolks Versus Egg Whites**

<b>Nutrient</b>	<b>White</b>	<b>Yolk</b>	<b>% Total in White</b>	<b>% Total in Yolk</b>
Protein	3.6 g	2.7g	57%	43%
Fat	0.05g	4.5g	1%	99%
Calcium	2.3 mg	21.9 mg	9.5%	90.5%
Magnesium	3.6 mg	0.85 mg	80.8%	19.2%
Iron	0.03 mg	0.4 mg	6.2%	93.8%
Phosphorus	5 mg	66.3 mg	7%	93%
Potassium	53.8 mg	18.5 mg	74.4%	25.6%

Sodium	54.8 mg	8.2 mg	87%	13%
Zinc	0.01 mg	0.4 mg	0.2%	99.8%
Copper	0.008 mg	0.013 mg	38%	62%
Manganese	0.004 mg	0.009 mg	30.8%	69.2%
Selenium	6.6 mcg	9.5 mcg	41%	59%
Thiamin	0.01 mg	0.03 mg	3.2%	96.8%
Riboflavin	0.145 mg	0.09 mg	61.7%	48.3%
Niacin	0.035 mg	0.004 mg	89.7%	9.3%
Pantothenic acid.	0.63 mg	0.51 mg	11%	89%
B6	0.002 mg	0.059 mg	3.3%	96.7%
Folate	1.3 mcg	24.8 mcg	5%	95%
B12	0.03 mcg	0.331 mcg	8.3%	91.7%
Vitamin A	0 IU	245 IU	0%	100%
Vitamin E	0 mg	0.684 mg	0%	100%
Vitamin D	0 IU	18.3 IU	0%	100%
Vitamin K	0 IU	0.119 IU	0%	100%
DHA and AA	0	94 mg	0%	100%
Carotenoids	0 mcg	21 mcg	0%	100%

## 2. No Carbohydrates before bed:

The idea to refrain from ingesting carbohydrates before bed has been around for as long as I can remember. The logic behind this thought process was energy intake vs energy output. Given that we are essentially sedentary during our sleep cycle the thought process was if you don't use it you store it. This direct economical approach toward understanding biochemistry is completely flawed from assimilation time to blood sugar relating hormones and the effect they have on neurotransmission.

Increase of available macronutrients, regardless of the source, will increase blood glucose concentration, the important factor to remember is gastric emptying time and the stability one will note in blood sugar levels after consuming a meal.

Carbohydrates essentially provide more immediate available glucose to the body, however complete and wholesome carbohydrates also have added fiber and nutrient co-factors that aid in sustaining optimal glucose metabolism. With a source of nutrition that not only sustains release of energy but supplies the body with the raw material to process energy one may note that complex naturally sourced carbohydrates may aid blood sugar regulation.

But why is blood sugar regulation so important before sleep? Elevated levels of catecholamine's (stress hormone) are inversely suppressed by a sustained increase of blood sugar, lower stress hormone concentration will promote more calm and promote better quality sleep, in particular deep wave sleep.

Neurotransmitters also have a subsequent effect with blood sugar regulation. Dopamine an excitatory neurotransmitter is elevated when stress hormone concentration is increased this in term will promote greater energy, not necessarily something one wants before going to bed! Elevation of blood sugar through gradual sustained outcomes will promote greater GABA concentration in the brain and

potentiate Serotonin sensitivity. With an increase of serotonin sensitivity and suppressed dopamine dominance one will note improved sleep leading to better recovery and performance, in short consuming healthy complex carbohydrates 90min to 2 hours prior to bed will improve your overall training experience and growth potential.

### 3. Greater calorie and carbohydrate intake on training days

Sometimes I feel that the consensus of nutrition in bodybuilding was developed by an economics major, as most people believe more intake equates to more growth, this however needs clarification as a great deal of issues may arise from assimilation capacity.

When we exercise we do go into a state of caloric deficit along with an increase activity of glucose mediated enzyme response catalyst by the effect of increase GLUT-4 exercise dependent activity. The issue however is that of gastric inhibition caused by increased cortisol concentration within the body.

Although GLUT-4 activity will promote greater glucose uptake to promote recovery of catabolized muscle tissue, it does so with little need of surplus carbohydrate intake. When a system is sensitized in essence it requires less of a nutrient to create a cause and effect of improved health or recovery, in short improved insulin receptor sensitivity equates to less surplus volumes of carbohydrates needed to create growth.

Gastrin is a gastric hormone that promotes the release of HCl which metabolises our nutrition by way of activating digestive enzymes. When digestive enzyme activity is optimal we will note improve nutrient assimilation and reduced bacterial overgrowth, this is in part due to less fermentation of partly digested food creating havoc to our small intestine.

So should we eat more calories when we train with extreme volumes? In short no, although an anabolic window is created through exercise that should be taken advantage of, the complete 24hour window for optimal gastric involvement to process our food becomes sluggish when stress hormone is higher than our homeostatic norm. In order to promote the best possible scenario for muscle growth we should aim to calculate our caloric requirement in accordance with our lean mass and goal, once this has been established one should reduced said caloric value from 20-40% dependent on the intensity and volume of the training session. On non training days however, an increase of 30-50% more calories and carbohydrates will prove to assimilate more effectively and reduce perceived DOMS (delayed onset muscle soreness) due to a reduced stress perception a higher healthy caloric diet has on our neurology, not to mention how carbohydrates reset the balance of our electrolyte dependent ion channels.

In short, eating less on training days and more on non training days will promote fat

loss and increase muscle gain whilst also reducing potential inflammation and gastro-intestinal issues.

#### 4. Fat exclusion during competition season:

The good old days of deprivation diets were completely destructive to not only our emotions but complete neurology too. Excluding fats from our diets has drastic neurological and thermic impairment effect on our complete physiology. Fats are needed for everything from cellular communication, mechanotransduction (hormonal sequencing resultant from changes in structure of one's cell), anti-inflammation, memory and overall hormonal production.

Restricting fat intake was completely viewed from a caloric perspective in the good old golden age. Our biochemistry however is not a country and simply does not purely work of the thermic model of calories in and calories out. No, our chemistry is far more complex and requires hormonal interaction to optimize nutrient assimilation.

Fat is the primary source of macronutrient that provides our bodies with not only the raw material for hormone production but also that of cell membrane sensitivity. Reducing fat intake also eventually reduces cell membrane activity to carbohydrate intake creating a far less permeable structure for cellular nutrient assimilation. Combined with increased levels of activity and reduced raw material to create an environment for optimal recovery one will not symptoms of depression, aggression and complete misery when getting ready for a show.

When getting ready for a show, however, reducing intake of saturated and transaminase fats is a great idea, as these sources of fat promote inflammation. Instead opt to include mono and poly unsaturated fats which aid in liver detoxification, hormonal sensitivity and anti-inflammation.

Essentially you don't want to cut the fat team; only a few of the players when getting ready for show season.

#### 5. Extra Protein for extra muscle gain

Although Protein is required for hypertrophy (enlargement of skeletal muscle cells) and muscular performance one may also need to take into account what effect excessive protein intake may have on the body. The scales between too little and too much has been unequivocally thrown to the extremes with fear mongering of potential carcinogenic growth to worry of reduced potential for recovery. Truth be told protein is a complete nutrient source and its intake is completely individual not to one's body weight but genetic code.

Polymorphism of genes is a mutation which creates a scene for potential impaired amino acid metabolism and subsequent inflammation. Through environmental influence our genes can either be switch on or off in relation to supply of available methyl donors. However, in certain cases when genes are switched on it may cause an ill effect on our body's chemistry.

Excessive intake of protein, in particular animal protein will note an increase of methionine intake. In normal circumstances methionine is readily metabolized without any ill effect, however with polymorphism of the MTHFR gene one will not an increased production of proinflammatory homocysteine.

Homocysteine is a destructive metabolite that reduces cardiac health and increases adrenal stress. Inevitably excessive protein intake that can not be assimilated will promote stress to our body not growth, understanding your protein threshold should be done with clear monitoring of glucose response, blood tests and subjective analysis of how you are actually feeling.

#### 6. Chicken for fat loss

The chicken and broccoli diet is well known in dieting circles, with the dry texture and complete deprived emotion of a senseless diet how wonderfully destructive has this dietary regime been to so many in the past. Now I am not saying that broccoli and chicken are bad for you, on the contrary broccoli provides us with much needed detoxification phytonutrients such as sulphoraphane and diindolylmethane (DIM), however excessive intake of any food source can be detrimental to our health.

The body's innate system is truly a genius mark of bioengineering, from the cytokine signaling to the release of macrophages our immune system is truly remarkable. Nutrients are assessed by our immune system to determine the viability a specific chemical make up may have on our physiology, but just like a toll gate that becomes congested with traffic excessive intake of a certain chemical strain may cause a blockade of immune suppression.

Chicken is a staple protein source in the bodybuilding community for reasons stemming from affordability to low concentration of saturated fat. Over consumption of chicken and broccoli however has in many instances caused food sensitivities to arise. Food sensitivities are the effect of the cause of excessive biochemical intake of a set type of food, leading to poor diversity of nutritional intake only leads our immunity to create a blockade to a seemingly sensible source of nutrition.

In the case of broccoli when poor availability is found due to lack of b vitamin intake from diverse nutrition a scenario of impaired nutrient assimilation also occurs leaving our gastro intestinal track in a state of hyper inflammation due to the sulfuric nature of broccoli make up.

The problem does not entirely lie with the intake of broccoli or chicken but rather the excessive obsession of these two food groups as a nutritional base. Diversity is key to a societies success as so too is the inclusion of diverse food to our immune system.

#### 7. Limit red meat for fat loss

Picture a scene of a sizzling steak on a hot stone plate next to mushrooms and a heart green salad and you may feel you're on a hot date not a diet. Red meat has often been equated as a cheat meal or food one indulges in during the off season. The truth in the make up of red meats protein is that of an abundance of iron and precursor amino acids required for the release of energy promoting

neurotransmitters such as dopamine and acetyl choline.

Training hard, heaving weight and depleting your calories to achieve the optimal physique? Then why would we decided to limit the intake of a food source that essentially potentiates our brains to perform harder and more efficiently? In truth red meat promotes the release of Hormone sensitive lipase in its direct role toward dopamine output.

Including red meat in your comp prep will promote your metabolism, mood and recovery. Red meat is simply an essential source of protein for omnivores during seasonal preparation toward the optimal composition to step on stage. Note moderation of anything is always the most important factor to remember when nutrition is concerned, although red meat will provide you with energy excessive amounts will promote homocysteine proliferation due to the higher concentration of methionine found in cattle products (whey, beef, milk etc....).

#### 8. Post workout anabolic window and surplus calorie consumption

The anabolic window has been extensively researched and discussed in the medical and fitness community. Truth behind what this window allows for has often been misleading.

Glut 4 is an insulin modulate glucose driver that promotes the uptake of nutrients into the cell. Glut 4 can be either exercise dependent or independent, however when one does undergo strenuous activity Glut 4 involvement is dramatically sensitized thus creating an environment for increased glucose uptake into the cell. With this understanding many a bodybuilding sought the opportunity to divulge in excessive calorie intake post workout with the hope of increase potential of muscle gain, the truth however is far less attractive than most would be lead to believe.

Our cells have a saturation point after which a spill over of nutrients will be noted in the blood stream. Excessive intake of calories post workout will only lead to an increase of extra cellular water mass which in essence is a state of inflammation. Excessive inflammation will slow our recovery, increase joint rigidity and promote a cascade of health issues to arise all through the cause of increased AGES (accelerated glycolated end structures). AGES in essences will make you prematurely age and feel like a sack of heavy bricks, thus your intake of post workout nutrition should be to that of an anabolic threshold limit not a reason to binge.

#### 9. Carbohydrates for Breakfast

Carbohydrates give us fuel right? So why not eat them first thing in the morning when we need energy the most? Once again the economical approach of caloric consumption is flawed, although consuming carbohydrates does increase concentration of available energy it also blunts the release of energy promoting stress hormones.

Insulin is inertly related to catecholamine (stress hormone) release, when we consume a readily available energy source we will reduce stress but also but our energetic response. Those athletes whom are extremely stress will however benefit

from carbohydrates for breakfast due to their reduced body fat and increase sensitivity to stress hormones however for those whom are not sub 10% fat breakfast of cereals will depend cognitive function and reduce dopamine output.

Essentially a diet whereas the first half of the day containing organic proteins, healthy fats and a vast abundance of vegetables will accelerate fat loss and promote muscular contractile capacity. If you are looking to optimize your overall performance both mentally and physically start your day off with moderate calories and little carbohydrate, as the day stretches on slowly increase caloric consumption reduce protein and fat intake and increase carbohydrate density this in tern will promote excitation and inhibition as to when it is required throughout your circadian rhythm.

#### 10. Water reduction for final weeks' dehydration

Looking to get DRY before stepping on stage and showcasing your hard earned physique? Think the economical approach of less in will equate to less stored then you best think again!

When our bodies are deprived of fluids we release glucose into our blood stream to supply our physiology with available hydration, you see one molecule of glucose attracts 3 molecules of water so in releasing glucose in a partly dehydrated physique the body will maintain optimal conduction of synapses (electric current from the brain to the body and back again). In essence the body does not care about our striated glutes or rock hard six pack it cares about survival.

Increasing water intake above our baseline results in the reduction of stress released hormones due to the inert relation aldosterone (naturally released diuretic hormone) has with catecholamines. Thus when we increase water intake a subsequent release of aldosterone will be note thus reducing stress hormone release and inevitable glucose deposits into the blood stream. More glycogen bigger looking muscles and increased extracellular water release results in a show physique that will showcase a physique in its best structure.

When you're next trying to shed water for your competition try going the other route and increase water intake along with carbohydrate intake the last 2 days prior to your event and see what the outcome or results may be. You will be pleasantly and calmly surprised.

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