Click Here



```
Control and development of musculature "Bodybuilder" redirects here. For the 2022 Russian film, see Bodybuilding, 1974Highest governing bodyInternational Federation of BodyBuilding & FitnessNicknamesBBFirst developedEngland, late 19th
centuryCharacteristicsContactNoTeam membersNoMixed-sexNoTypeIndoorVenueAuditoriumPresenceCountry or regionWorldwideOlympicNoParalympicNoVorld Games1981-2009 Bodybuilding is the practice of progressive resistance exercise to build, control, and develop one's muscles via hypertrophy.[1] An individual who engages in this activity
is referred to as a bodybuilder. It is primarily undertaken for aesthetic purposes over functional ones, distinguishing it from similar activities such as powerlifting and calisthenics. In competitive bodybuilding, competitors appear onstage in line-ups and perform specified poses (and later individual posing routines) for a panel of judges who rank them
based on conditioning, muscularity, posing, size, stage presentation, and symmetry.[2] Bodybuilders prepare for competitions by exercising and dehydration to achieve maximum muscle definition and vascularity. Most bodybuilders also
tan and shave their bodies prior to competition.[3] A bodybuilder may be able to gain 8-15 pounds (4-7 kg) of muscle per year if they lift weights for seven hours per week, but muscle gains begin to slow down after
the first two years to about 5-15 pounds (2-7 kg) per year. After five years, gains can decrease to as little as 3-10 pounds (1-5 kg) per year.[4] Some bodybuilders use anabolic steroids and other performance-enhancing drugs to build muscles and recover from injuries faster. However, using performance-enhancing drugs can have serious health risks
[5] Furthermore, most competitions prohibit the use of these substances. Despite some calls for drug testing to be implemented, the National Physique Committee (considered the leading amateur bodybuilding federation) does not require testing. [6] The winner of the annual IFBB Mr. Olympia contest is recognized as the world's top male professional
bodybuilder. Since 1950, the NABBA Universe Championships have been considered the top amateur bodybuilding contests, with notable winners including Ronnie Coleman, Jay Cutler, Steve Reeves, and Arnold Schwarzenegger. See also: History of physical training and fitness The Farnese Hercules, 216 AD Stone-lifting competitions were practiced
in ancient Egypt, Greece, and Tamilakam.[7] Western weightlifting developed in Europe from 1880 to 1953, with strongmen displaying feats of strength for the public and challenging each other. The focus was not on their physique, and they possessed relatively large bellies and fatty limbs compared to bodybuilders of today.[8] Eugen Sandow, often
referred to as the "Father of Modern Bodybuilding" Bodybuilding developed in the late 19th century, promoted in England by Eugen Sandow. He allowed audiences were thrilled to see a well-developed physique, the men simply displayed their bodies as part of
strength demonstrations or wrestling matches. Sandow had a stage show built around these displays through his manager, Florenz Ziegfeld. The Oscar-winning 1936 musical film The Great Ziegfeld depicts the beginning of modern bodybuilding, when Sandow began to display his body for carnivals.[9] Sandow was so successful at flexing and posing
his physique that he later created several businesses around his fame, and was among the first to market products branded with his name. He was credited with inventing and selling the first exercise equipment for the masses: machined dumbbells, spring pulleys, and tension bands. Even his image was sold by the thousands in "cabinet cards" and
other prints. Sandow organized the first bodybuilding contest on September 14, 1901, called the "Great Competition". It was held at the Royal Albert Hall in London.[10] Judged by Sandow, Sir Charles Lawes, and Sir Arthur Conan Doyle, the contest was a great success and many bodybuilding enthusiasts were turned away due to the overwhelming
number of audience members. The trophy presented to the winner was a gold statue of Sandow sculpted by Frederick Pomeroy. The winner was William L. Murray of Nottingham. The silver Sandow trophy—now the most famous of all—was presented to third-place winner by the silver Sandow sculpted by Frederick Pomeroy. The winner was William L. Murray of Nottingham.
A.C. Smythe.[11] In 1950, this same bronze trophy was presented to Steve Reeves for winning the inaugural NABBA Mr. Universe contest. It would not resurface again until 1977 when the winner of the IFBB Mr. Olympia contest, Frank Zane, was presented with a replica of the bronze trophy. Since then, Mr. Olympia winners have been consistently
awarded a replica of the bronze Sandow. The first large-scale bodybuilding competition in America took place from December 28, 1903, to January 2, 1904,[12] at Madison Square Garden in New York City. The competition was promoted by Bernarr Macfadden, the father of physical culture and publisher of original bodybuilding magazines such as
Health & Strength. The winner was Al Treloar, who was declared "The Most Perfectly Developed Man in the World".[13] Treloar won a thousand dollar cash prize, a substantial sum at that time. Two weeks later, Thomas Edison made a film of Treloar's posing routine. Edison had also made two films of Sandow a few years before. Those were the first
three motion pictures featuring a bodybuilder. In the early 20th century, Macfadden and Charles Atlas continued to promote bodybuilding prior to 1930 include: Earle Liederman (writer of some of bodybuilding's earliest books), Zishe Breitbart, George
Hackenschmidt, Emy Nkemena, George F. Jowett, Finn Hateral (a pioneer in the art of posing)[citation needed], Frank Saldo, William Bankier, Launceston Elliot, Sig Klein, Sgt. Alfred Moss, Joe Nordquist, Lionel Strongfort ("Strongfortism"),[14] Gustav Frištenský, Ralph Parcaut (a champion wrestler who also authored an early book on
"physical culture"), and Alan P. Mead (who became a muscle champion despite the fact that he lost a leg in World War I). Actor Francis X. Bushman, who was a disciple of Sandow, started his career as a bodybuilder and sculptor's model before beginning his famous silent movie career.[15] Bodybuilding became more popular in the 1950s and 1960s
with the emergence of strength and gymnastics champions, and the simultaneous popularization of bodybuilding magazines, training principles, nutrition for bulking up and cutting down, the use of protein and other food supplements, and the opportunity to enter physique contests. The number of bodybuilding organizations grew, and most notably
the International Federation of Bodybuilders (IFBB) was founded in 1946 by Canadian brothers Joe and Ben Weider. Other bodybuilding organizations included the Amateur Bodybuilding Guild (WBBG). Consequently, the contests grew both in number and in
size. Besides the many "Mr. XXX" (insert town, city, state, or region) championships, the most prestigious titles[according to whom?] were Mr. America, Mr. Universe, Mr. Galaxy, and ultimately Mr. Olympia, which was started in 1965 by the IFBB and is now considered the most important bodybuilding competition in the world.[1] During
the 1950s, the most successful and most famous competing bodybuilders were Bill Pearl, Reg Park, Leroy Colbert, and Clarence Ross.[16] Certain bodybuilders rose to fame thanks to the relatively new medium of television, as well as cinema. The most successful and most famous competing bodybuilders were Jack LaLanne, Steve Reeves, Reg Park, and Mickey Hargitay.[17] While there were
well-known gyms throughout the country during the 1950s (such as Vince's Gym in North Hollywood, California and Vic Tanny's chain gyms), there were still segments of the United States that had no "hardcore" bodybuilding gyms until the advent of Gold's Gym in the mid-1960s. Finally, the famed Muscle Beach in Santa Monica continued its
popularity as the place to be for witnessing acrobatic acts, feats of strength, and the like. The movement grew more in the 1960s with increased TV and movie exposure, as bodybuilding had major publicity thanks to the
appearance of Arnold Schwarzenegger, Franco Columbu, Lou Ferrigno, Mike Mentzer and others in the 1977 docudrama Pumping Iron. By this time, the IFBB dominated the competitive bodybuilding landscape and the Amateur Athletic Union (AAU) took a back seat. The National Physique Committee (NPC) was formed in 1981 by Jim Manion,[18]
who had just stepped down as chairman of the AAU Physique Committee. The NPC has gone on to become the most successful bodybuilding organization in the United States and is the amateur division of the IFBB. The late 1980s and early 1990s saw the decline of AAU-sponsored bodybuilding contests. In 1999, the AAU voted to discontinue its
bodybuilding events. This period also saw the rise of anabolic steroids in bodybuilding and many other sports. More significant use began with Arnold Schwarzenegger, Sergio Oliva, and Lou Ferrigno in the late 1960s and early 1970s, and continuing through the 1980s with Lee Haney, the 1990s with Dorian Yates, Ronnie Coleman, and Markus Rühl
and up to the present day. Bodybuilders such as Greg Kovacs attained mass and size never seen previously but were not successful at the pro level. Others were renowned for their spectacular development of a particular body part, like Tom Platz or Paul Demayo for their leg muscles. At the time of shooting Pumping Iron, Schwarzenegger, while
never admitting to steroid use until long after his retirement, said, "You have to do anything you can to get the advantage in competition".[citation needed] He would later say that he did not regret using steroids.[19] To combat anabolic steroid use and in the hopes of becoming a member of the IOC, the IFBB introduced doping tests for both steroids
and other banned substances. Although doping tests occurred, the majority of professional bodybuilders still used anabolic steroids for competition. During the 1970s, the use of anabolic steroids was openly discussed, partly due to the fact they were legal. [20] In the Anabolic Steroids Control Act of 1990, U.S. Congress placed anabolic steroids into
Schedule III of the Controlled Substances Act (CSA). In Canada, steroids are listed under Schedule IV of the Controlled Drugs and Substances Act, enacted by the federal Parliament in 1996.[21] Main article: World Bodybuilding Federation In 1990, professional wrestling promoter Vince McMahon attempted to form his own bodybuilding organization
known as the World Bodybuilding Federation (WBF). It operated as a sister to the World Wrestling Federation (WWF, now WWE), which provided cross-promotion via its performers and personalities. Tom Platz served as the WBF's director of talent development, and announced the new organization during an ambush of that year's Mr. Olympia
(which, unbeknownst to organizers, McMahon and Platz had attended as representatives of an accompanying magazine, Bodybuilding—which resulted in its championships being held as pay-per-view events with WWF-inspired sports
entertainment features and showmanship. The organization signed high-valued contracts with a number of IFBB regulars. [22][23][24] The IFBB's inaugural championship in June 1991 (won by Gary Strydom) received mixed reviews. The WBF would be indirectly impacted by a steroid scandal involving the WWF, prompting the organization to impose a
drug testing policy prior to the 1992 championship. The drug testing policy hampered the quality of the 1992 championship before being injured
in a motorcycle accident) and attempting to sign Lou Ferrigno (who left the organization shortly after the drug testing policy was announced) did not come to fruition. The second PPV received a minuscule audience, and the WBF dissolved only one month later in July 1992.[22][23][24] Eight-time Mr. Olympia Ronnie Coleman in October 2009 In 2003,
Joe Weider sold Weider Publications to American Media, Inc. (AMI). The position of president of the IFBB was filled by Rafael Santonja following the death of Ben Weider in October 2008. In 2004, contest promoter Wayne DeMilia broke ranks with the IFBB and AMI took over the promotion of the Mr. Olympia contest: in 2017 AMI took the contest
published source?] In the early 2000s, the IFBB was attempting to make bodybuilding an Olympic sport. It obtained full IOC membership in 2000 and was attempting to get approved as a demonstration event at the Olympic sport. It obtained full IOC membership in 2000 and was attempting to get approved as a demonstration event at the Olympic sport.
remains controversial since many argue that bodybuilding is not a sport.[27] The advent of social media had a profound influence on fitness and bodybuilding. It is common to see platforms such as Instagram, TikTok, and YouTube flooded with fitness-related content, changing how the average person views and interacts with fitness culture. Gym
clothing brands like Gymshark, YoungLA and Rawgear leveraged this platform to create their brands. [28] By recruiting fitness ambassadors—real people who embody their brand values—these companies personalize their brands.
trainers, promote the brand by sharing their workout routines, dietary plans, and gym clothing. YouTube in particular has seen a surge in fitness content, ranging from gym vlogs to detailed discussions on workout attire. This not only provides consumers with an abundance of free resources to aid their fitness journey, but also creates a more informed
consumer base. Another growing trend with gym-related social media is the phenomenon of gym-shaming; a video posted by content creator Jessica Fernandez on Twitch that went viral showed her lifting weights in a gym while a man in the background stared at her, sparking a widespread debate about narcissism and an increasingly toxic gym
culture in the age of social media. The video led to criticism of an emerging trend in which gyms, once known as places for focused workouts, are now being treated as filming locations for aspiring or established influencers with bystanders being unintentionally placed under the public eye in the process. Bodybuilder Joey Swoll, who voiced his
concerns over this culture, addressed the controversy by stating that while harassment in gyms needs to be addressed, the man in Fernandez's video was not guilty of it.[29] Although social media is giving more attention to the world of bodybuilding, there are still some areas that are controversial. For instance, concerns are growing over the
influence which bodybuilding content on social media has on young adults and their perception of their own bodies, as they tend to compare themselves to gym influencers online. These concerns get further exacerbated by the poor transparency about steroid use on social media, as many influencers either do not elaborate about whether or not they
are "natural" bodybuilders, or firmly deny accusations about being "enhanced". This blurs the line between what can be achieved through the use of anabolic steroids. This is also detrimental for adult lifters since they often find their body image being skewed by the content they consume, potentially leading to
an unhealthy relationship towards nutrition and exercise. Mental disorders such as body dysmorphia or eating disorders might also be a consequence. However, more and more influencers are opening up about steroid use and strongly advocate for transparency about steroid use online. This has sparked an ongoing open debate about the risks of
anabolic steroids. Many people view this as a positive trend as it raises awareness and educates about the effects, uses and dangers of steroids. Another topic which is now widely discussed online is mental health in association with bodybuilding, as aforementioned mental disorders might affect hobby lifters of all ages and backgrounds. [citation]
needed] Main article: Professional bodybuilding In the modern bodybuilding industry, the term "professional" generally means a bodybuilder who has won qualifying competitions as an amateur and has earned a "pro card" from their respective organization. Professionals earn the right to compete in competitions that include monetary prizes. A pro
card also prohibits the athlete from competing in federations other than the one from which they have received the pro card. [30] Depending on the level of success, these bodybuilders may receive monetary compensation from sponsors, much like athletes in other sports. Main article: Natural bodybuilding Due to the growing concerns of the high
cost, health consequences, and illegal nature of some steroids, many organizations have formed in response and have deemed themselves "natural" bodybuilding competitions. In addition to the concerns noted, many promoters of bodybuilding and have
successfully introduced a more mainstream audience to the sport of bodybuilding by including competitors whose physiques appear much more attainable and realistic.[31] In natural contests, the testing protocol ranges among organizations from lie detectors to urinalysis. Penalties range from organization to organization, from suspensions to strict
bans from competition. Natural organizations also have their own list of banned substances are banned from competition. There are many natural bodybuilding organizations; some of the larger ones include: MuscleMania, Ultimate Fitness Events
(UFE), INBF/WNBF, and INBA/PNBA. These organizations either have an American or worldwide presence and are not limited to the country in which they are headquartered.[31] Due to those who found open-bodybuilding to be "too big" or "ugly" and unhealthy, a new category was started in 2013.[32] The first Men's Physique Olympia winner was
Mark Wingson, who was followed by Jeremy Buendia for four consecutive years. Like open-bodybuilding, the federations in which bodybuilders can compete are natural divisions as well as normal ones. The main difference between the two is that men's physique competitors pose in board shorts rather than a traditional posing suit and open-
bodybuilders are much larger and are more muscular than the men's physique competitors.[33] Open-bodybuilders have an extensive routine for posing while the Physique competitors are not above 200 lbs and have a bit of a more attainable and aesthetic
physique in comparison to open-bodybuilders.[35] Although this category started off slowly, it has grown tremendously, and currently men's physique seems to be a more popular class than open-bodybuilding. [36] This is the middle ground of Men's Physique and Bodybuilding, a category that emphasizes symmetry, proportion, pleasing lines, and a
small waist over size and mass.[37] The competitors in this category are not nearly as big as Open class bodybuilders but not as small as Men's Physique competitors. They pose and perform in men's boxer briefs or posing trunks to show off the legs as in the Open class, unlike Men's Physique which hide the legs in board shorts. The judging criteria
also looks to see certain poses emphasized, such as ones accentuating the vacuum to illustrate a tapered torso and lack of the infamous bloated gut of Open bodybuilding. The Classic Physique Mr. Olympia began in 2016. Danny Hester was the first classic physique Mr. Olympia. As of 2024[update], Chris Bumstead is the 6x reigning Mr.
Olympia.[38][39] Main article: Female bodybuildingThe female movement of the 1960s, combined with Title IX and the all around fitness revolution, gave birth to new alternative perspectives of feminine beauty that included an athletic physique of toned muscle. This athletic physique was found in various popular media outlets such as fashion
magazines. Female bodybuilders changed the limits of traditional femininity as their bodies showed that muscles are not only just for men.[40] Nikki Fuller posing The first U.S. Women's National Physique Championship, promoted by Henry McGhee and held in 1978 in Canton, Ohio, is generally regarded as the first true female bodybuilding contest—
that is, the first contest where the entrants were judged solely on muscularity.[41] In 1980, the first Ms. Olympia (initially known as the "Miss" Olympia), the most prestigious contest for professionals, was held. The first winner was Rachel McLish, who had also won the NPC's USA Championship earlier in the year. The contest was a major turning
 Francis was actually a powerlifter, though she soon made a successful transition to bodybuilding, becoming one of the leading competition increased in popularity, surpassing that of female bodybuilding, and provided an alternative for women who choose not to
develop the level of muscularity necessary for bodybuilding. McLish would closely resemble what is thought of today as a fitness and figure competed in the 2011 NPC Armbrust Pro Gym Warrior Classic Championships in Loveland, Colorado, at the
age of 75 years and 349 days.[43] In competitive bodybuilding, bodybuilding, bodybuilding, bodybuilders aspire to present an "aesthetically pleasing" body on stage.[44][45] In prejudging, competitors do a series of mandatory poses: the front lat spread, front double biceps, back double biceps, side chest, side triceps, Most Muscular (men only), abdominals and
thighs. Each competitor also performs a personal choreographed routine to display their physique. A posedown is usually held at the end of a posing round, while judges are finishing their scoring. Bodybuilders are advised to spend a lot of time practising their posing in front of mirrors or under the guidance of their coach.[46] In contrast to
strongman or powerlifting competitions, where physical strength is paramount, or to Olympic weightlifting, where the main point is equally split between strength and technique, bodybuilding competitions, where the main point is equally split between strength and technique, bodybuilding competition, and sometimes have
different categories in which to compete. [47] Further information: Weight cycling Lukas Osladil posing onstage with a variation of the Most Muscular pose The general strategy adopted by most present-day competitive bodybuilders is to make muscle gains for most of the year (known as the "off-season") and, approximately 12-14 weeks from
competition, lose a maximum of body fat (referred to as "cutting") while preserving as much muscular mass as possible. The bulking phase entails remaining in a net positive energy balance (calorie surplus). The amount of a surplus in which a person remains is based on the person's goals, as a bigger surplus and longer bulking phase will create more
fat tissue. The surplus of calories relative to one's energy balance (calorie deficit). The main goal of cutting is to oxidize fat while preserving as much muscle as possible. The larger the calorie deficit, the faster one will lose that muscle as possible.
weight. However, a large calorie deficit will also create the risk of losing muscle tissue.[49] The bulking and cutting strategy is considered effective because there is a well-established link between muscle hypertrophy and being in a state of positive energy balance.[50] A sustained period of caloric surplus will allow the athlete to gain more fat-free
mass than they could otherwise gain under eucaloric conditions. Some gain in fat mass is expected, which athletes seek to oxidize in a cutting period while maintaining as much lean mass as possible.[citation needed] However, it is unclear whether one can maintain enough fat-free mass during cutting for the overall process to be worth it.[51][52] The
attempt to increase muscle mass in one's body without any gain in fat is called clean bulking. Competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a peak appearance during a brief "competitive bodybuilders focus their efforts to achieve a brief "competitive bodybuilders focus their efforts focus their efforts focus the brief "competitive bodybuilders focus their efforts focus the brief "competitive bodybuilders focus t
common tactic for keeping fat low and muscle mass high is to have higher calorie days to maintain a clean bulk diets start off with a moderate amount of carbs, moderate amount of fats. [54] To maintain a clean bulk, it is important to reach calorie goals every day.
Macronutrient goals (carbs, fats, and proteins) will be different for each person, but it is ideal to get as close as possible.[citation needed] "Dirty bulking" is the process of eating at a massive caloric surplus without trying to figure out the exact amount of ingested macronutrients, often down with junk food such as burgers and fries. Weightlifters who
attempt to gain mass quickly with no aesthetic concerns often choose to do this. "Dirty bulking" is often favored by bodybuilders in the off-season who are looking to rapidly increase size and strength without worrying about fat gain. While it can lead to quick weight gain and increased muscle mass due to the abundance of calories, it also typically
results in a significant increase in body fat. This means a more aggressive cutting phase is usually required afterward to shed the excess fat, which can be physically and mentally taxing. Additionally, consuming large amounts of processed foods high in sugar and unhealthy fats can negatively impact cardiovascular health and insulin sensitivity over
time. Despite these risks, some lifters find dirty bulking psychologically easier, as it removes the pressure of strict meal planning and food tracking. [55] Bodybuilders use three main strategies to maximize muscle hypertrophy: Strength training through weights or elastic/hydraulic resistance. Specialized nutrition, incorporating extra protein and
supplements when necessary. Adequate rest, including sleep and recuperation between workouts. [56] Main articles: Weight training and Strength training an
section and add the appropriate references if you can. Unsourced or poorly sourced material may be challenged and removed. Find sources: "Bodybuilding" - news · newspapers · books · scholar · JSTOR (March 2022) Intensive weight training causes micro-tears
in the muscle contribute to the soreness felt after exercise, called delayed onset muscle growth. Normally, this soreness becomes most apparent a day or two after a workout. However, as muscles become adapted to the exercises, soreness tends to decrease. [57] Weight
training aims to build muscle by prompting two different types of hypertrophy: sarcoplasmic hypertrophy leads to larger muscles and so is favored by increasing repetitions, whereas myofibrillar hypertrophy.
hypertrophy is triggered by lifting heavier weight.[58] In either case, there is an increase in both size and strength of the muscles (compared to what happens if that same individual does not lift weights at all), although the emphasis is different.[58] The high levels of muscle growth and repair achieved by bodybuilders require a specialized diet.
Generally speaking, bodybuilders require more calories than the average person of the same weight to provide the protein and energy requirements needed to support their training and increase muscle mass. In preparation of a contest, a sub-maintenance level of food energy is combined with cardiovascular exercise to lose body fat. Proteins,
carbohydrates and fats are the three major macronutrients that the human body needs to build muscle.[59] The ratios of calories from carbohydrates play an important role for bodybuilders. They give the body energy to deal with the rigors of training and recovery
Carbohydrates also promote secretion of insulin, a hormone enabling cells to get the glucose they need. Insulin has steroid-like effects in terms of muscle gains. [62] It is impossible to promote protein synthesis without the existence of insulin, which means that without
ingesting carbohydrates or protein—which also induces the release of insulin—it is impossible to add muscle mass.[63] Bodybuilders seek out low-glycemic polysaccharides and other slowly digesting carbohydrates, which release energy in a more stable fashion than high-glycemic sugars and starches. This is important as high-glycemic carbohydrates
cause a sharp insulin response, which places the body in a state where it is likely to store additional food energy as fat. However, bodybuilders frequently do ingest some quickly digesting sugars (often in form of pure dextrose or maltodextrin) just before, during, and/or just after a workout. This may help to replenish glycogen stored within the
muscle, and to stimulate muscle protein synthesis.[64] Protein milkshakes, made from protein synthesis.[65] Current acting muscles. Cortisol decreases amino acid uptake by muscle and inhibits protein synthesis.[65] Current
recommendations suggest that bodybuilders should consume 25-30% of protein per total calorie intake to further their goal of maintaining and improving that 1 gram of protein per total calorie intake to further their goal of maintaining and improving that 1 gram of protein per total calorie intake to further their goal of maintaining and improving that 1 gram of protein per total calorie intake to further their goal of maintaining and improving that 1 gram of protein per total calorie intake to further their goal of maintaining and improving that 1 gram of protein per total calorie intake to further their goal of maintaining and improving their body composition.
recommending 1.5, 2, or more.[67] It is believed that protein needs to be consumed frequently throughout the day, especially during/after a workout, and before sleep.[68] There is also some debate concerning the best type of protein to take. Chicken, turkey, beef, pork, fish, eggs and dairy foods are high in protein, as are some nuts, seeds, beans,
and lentils. Casein or whey are often used to supplement the diet with additional protein contained in many popular brands of protein also has a bigger effect than casein on insulin levels,
triggering about double the amount of insulin release. [69] That effect is somewhat overcome by combining casein and whey. Bodybuilders were previously thought to require protein with a higher BV than that of soy, which was additionally avoided due to its alleged estrogenic (female hormone) properties, though more recent studies have shown that
soy actually contains phytoestrogens which compete with estrogens in the male body and can block estrogens are also beneficial because they can inhibit some pituitary functions while stimulating the liver's P450 system (which eliminates hormones, drugs, and waste
from the body) to more actively process and excrete excess estrogen.[71] Some bodybuilders often split their food intake into 5 to 7 meals of equal nutritional content and eat at regular intervals (e.g., every 2 to 3 hours). This approach serves two purposes: to limit overindulging in the cutting phase, and to allow for the consumption of large volumes
of food during the bulking phase. Eating more frequently does not increase basal metabolic rate when compared to 3 meals a day.[72] While food does have a metabolic cost to digest, absorb, and store, called the thermic effect of food, it depends on the quantity and type of food, not how the food is spread across the meals of the day. Well-controlled
studies using whole-body calorimetry and doubly labeled water have demonstrated that there is no metabolic advantage to eating more frequently.[73][74][75] Main article: Bodybuilding supplement The important role of nutrition in building muscle and losing fat means bodybuilders may consume a wide variety of dietary supplements.[76] Various
products are used in an attempt to augment muscle size, increase the rate of fat loss, improve joint health, increase muscle size, increase muscle size, increase and precursor substances such as prohormones to increase muscle
 hypertrophy. Anabolic steroids cause hypertrophy of both types (I and II) of muscle fibers, likely caused by an increased synthesis of muscle proteins. They also provoke undesired side effects including hepatotoxicity, gynecomastia, acne, the early onset of male pattern baldness and a decline in the body's own testosterone production, which can cause
testicular atrophy.[77][78][79] Other performance-enhancing substances used by competitive bodybuilders include human growth hormone (HGH). HGH is also used by female bodybuilders to obtain bigger muscles "while maintaining a 'female appearance'".[80] Muscle growth is more difficult to achieve in older adults than younger adults because of
biological aging, which leads to many metabolic changes detrimental to muscle growth; for instance, by diminishing growth hormone and testosterone levels. Some recent clinical studies have shown that low-dose HGH treatment for adults with HGH deficiency changes the body composition by increasing muscle mass, decreasing fat mass, increasing
bone density and muscle strength, improves cardiovascular parameters, and affects the quality of life without significant side effects.[81][82][83] In rodents, knockdown of metallothionein gene expression results in activation of the Akt pathway and increases in myotube size, in type IIb fiber hypertrophy, and ultimately in muscle strength.[84] This
has not been studied well in humans. Main article: Site enhancement oil Some bodybuilders inject oils or other compounds into their muscles (sometimes known as "synthol") to enhance their size or appearance. This practice can have serious health consequences and risks for humans. [85] Although muscle stimulation occurs when lifting weights,
muscle growth occurs during rest periods for up to 48 hours after the workout. [86][87] Some bodybuilders add a massage at the end of each workout to their recovery capacity. There
are many reasons why overtraining occurs, including lack of adequate nutrition, lack of recovery time between workouts, insufficient sleep, and training at a high intensity for too long (a lack of splitting apart workouts, insufficient sleep, and training at a high intensity for too long (a lack of splitting apart workouts). Training at a high intensity for too long (a lack of splitting apart workouts).
state that interferes with sleep patterns. [89] To avoid overtraining, intense frequent training must be met with at least an equal amount of purposeful recovery. Timely provision of carbohydrates, proteins, and various micronutrients such as vitamins, minerals, phytochemicals, even nutritional supplements are critical. A mental disorder, informally
called bigorexia (by analogy with anorexia), may account for overtraining in some individuals. Sufferers feel as if they are never big enough or muscular enough, which forces them to overtraining for a brief period can be
beneficial. Overtraining can be used advantageously, as when a bodybuilder is purposely overtrained for a brief period of time to super compensate during a regeneration phase. These are known as "shock micro-cycles" and were a key training technique used by Soviet athletes.[91] Beginning in the 2010s, studies on bodybuilding athletes found
higher mortality rates, particularly when compared with other sport specific mortality rates. Risks cited were sudden cardiac death, as well as use of performance enhancing drugs and unique competitive training, such as extreme weight changes and intentional dehydration. Unlike other professional sports, the IFBB Pro League, the largest
professional bodybuilding federation in the US, does not routinely test athletes for steroids are easily obtained and widely used by competitors. [92][93][94] Athletic training Beefcake Body image Exercise physiology Health club Lean body mass Muscle
dysmorphia Physical exercise Physical fitness Power training Sports medicine Sports medicine Sports nutrition a b Emery M. "Men's Bodybuilding: A Short History". Bodybuilding Federation. Retrieved October 15, 2014.
2023. ^ "Shaving Body Hair For Men!". Bodybuilding.com. August 30, 2010. Archived from the original on June 26, 2020. Retrieved February 15, 2021. ^ "Anabolic Steroids and Other Appearance and
Performance Enhancing Drugs (APEDs)". National Institute on Drug Abuse. Retrieved October 15, 2023. ^ "Should The IFBB Ban Steroids For Real?". Bodybuilding.com. March 16, 2005. Archived from the original on June 25, 2020. Retrieved January 12, 2021. ^ a b Karthikeyan D (January 12, 2021). ^ a b Karthikeyan D (January 12, 2021). "Locked horns and a flurry of feathers". The
Hindu. Archived from the original on May 11, 2013. Retrieved July 2, 2017 - via www.thehindu.com. ^ Schwarzenegger A (1999). The New Encyclopedia of Modern Bodybuilding. Fireside, NY: Simon & Schwarzenegger A (1999). The New Encyclopedia of Modern Bodybuilding. Fireside, NY: Simon & Schwarzenegger A (1999). The New Encyclopedia of Modern Bodybuilding.
26, 2016. Archived from the original on April 23, 2021. Retrieved April 23, 2021. Archived from the original on November 6, 2013. Archived from the original on April 23, 2021. Archived from the original on April 23, 2021.
2021. Retrieved April 23, 2021. A Ryan, Eugene Avery (1899). "Physical Culture, vol. 10, no. 6 (December 1903), p. 555". Archived from the original on February 4, 2021. Retrieved August 16, 2019. Archived from the original on June 29, 2012. Retrieved October 5, 2012.
"Strongfortism - Lesson One". Archived from the original on August 2, 2008. ^ Creativity of God in the Human Body: "Bodybuilding". Abdullah F Shrit. ISBN 978-1-4840-1198-0. Archived from the original on April 5, 2023. Retrieved May 3, 2021. ^ "A History Lesson In Bodybuilding". Bodybuilding.com. March 21, 2005. Archived from the original on
April 23, 2021. Retrieved April 23, 2021. Archived from the original on April 23, 2021.
original on September 21, 2012. Retrieved October 5, 2012. Archived from the original on November 6, 2013. Retrieved February 27, 2007. Sranch, archived from the original on November 6, 2013. Retrieved February 27, 2007. Sranch, archived from the original on November 6, 2013. Retrieved February 27, 2007. Sranch, archived from the original on November 6, 2013. Retrieved February 27, 2007. Sranch, archived from the original on November 8, 2013. Retrieved February 27, 2007. Sranch, archived from the original on November 8, 2013. Section of the original on No
Legislative Services (September 19, 2019). "Consolidated federal laws of canada, Controlled Drugs and Substances Act". laws-lois.justice.gc.ca. Archived from the original on April 8, 2022. Retrieved January 24, 2020. ^ a b "When Bodybuilding Met Wrestling: The Bizarre Tale of the World Bodybuilding Federation". BarBend. March 17, 2020.
Archived from the original on May 24, 2021. Retrieved May 24, 2021. ^ a b Muchnick, Irvin (2007). Wrestling Babylon: piledriving tales of drugs, sex, death and scandal. Toronto [Ont.]: ECW Press. ISBN 978-1-55490-761-8. OCLC 244769018. ^ a b "Vince McMahon's Attempt to Take Over Bodybuilding". Muscle & Fitness. March 7, 2019. Archived
from the original on June 25, 2021. Retrieved May 24, 2021. ^ "American Media, Inc. Acquires Full Ownership Of Mr. Olympia Competition". www.prnewswire.com (Press release). September 5, 2017. Archived from the original on May 19, 2020. Retrieved February 8, 2023. ^ Abdullah F. Shirt. Creativity of God in the Human Body "Bodybuilding"
Abdullah F Shrit. ISBN 978-1-4840-1198-0. ^ Littman J (November 13, 2007). "Bodybuilding And The Olympics: An Ongoing Controversy". article99.com. Archived from the original on December 5, 2007. ^ Kristen
Fleming (February 23, 2023). "Bodybuilder Joey Swoll has had enough of fitness influencers". Retrieved May 17, 2023. [unreliable source?] ^ "IFBB FAQ". International Fitness and Bodybuilding Federation. Archived from the original on February 8, 2023. Retrieved February 8, 2023. ^ a b "Beginner's Guide To Natural Bodybuilding Competition:
Disseminating Misconception From Reality!". Bodybuilding.com. May 10, 2009. Archived from the original on January 26, 2020. Retrieved January 26, 2020. Retrieved January 26, 2020. Archived from the original on May 12, 2021.
Retrieved April 23, 2021. ^ "How Bodybuilding is Judged, Different Divisions, and Scoring". BarBend. November 27, 2020. Archived from the original on April 23, 2021. Retrieved April 23, 2021. Retrieved April 23, 2021. Retrieved April 23, 2021. Retrieved April 23, 2021. Archived from the original on April 23, 2021. Retrieved April 24, 2021. Retrieved Apri
^ Roberts, Brandon M; Helms, Eric R; Trexler, Eric T; Fitschen, Peter J (January 31, 2020). "Nutritional Recommendations for Physique Athletes". Journal of Human Kinetics. 71: 79-108. doi:10.2478/hukin-2019-0096. ISSN 1640-5544. PMC 7052702. PMID 32148575. ^ Liokaftos, Dimitrios (February 2012). From 'Classical' To 'Freaky:' An Exploration
of the Development of Dominant, Organised, Male Bodybuilding Culture (doctoral thesis). Goldsmiths, University of London. Archived from the original on April 23, 2021. A Brief History of the Classic Physique. Muscle & Fitness. February 24, 2007. Retrieved October 23, 2024. A Bachu, Ramya (December 18, 2022).
"Bodybuilding World Reacts to Chris Bumstead's Fourth Mr.Olympia Triumph". EssentiallySports. Retrieved August 30, 2023. ^ Lockridge, Roger "Rock" (October 13, 2024). "Chris Bumstead Wins 6th Olympia Classic Physique Title, Announces Retirement". Muscle & Fitness. Retrieved October 23, 2024. ^ Locks, Adam (March 1, 2013). Critical
Readings in Bodybuilding. Routledge. doi:10.4324/9780203809457. ISBN 978-0-203-80945-7. Archived from the original on April 5, 2023. Retrieved October 4, 2021. ^ Todd, Jan, "Bodybuilding", St. James Encyclopedia of Pop Culture, Gale Group, 1999 ^ Shain, Cera R. (March 20, 2019). ""The Most Muscular Woman I Have Ever Seen": Bev Francis's
Performance of Gender in Pumping Iron II: The Women". p. 43. Retrieved November 2, 2023. ^ Glenday C (2013). Guinness World Records 2014. The Jim Pattison Group. p. 60. ISBN 978-1-908843-15-9. ^ "Top 10 Most Impressive Bodybuilder Physiques of All Time". Muscleprodigy. Archived from the original on July 29, 2017. Retrieved June 14, 2013.
 ^ "Judging the 2008 Mr. Olympia: Judges Provide Full Transparency and Complete Explanation of Results". Muscletime. Archived from the original on May 16, 2019. A Probert, Anne; Leberman, Sarah; Palmer, Farah (March 1, 2007). "New Zealand
Bodybuilder Identities: Beyond Homogeneity". International Review for the Sociology of Sport. 42 (1): 5-26. doi:10.1177/1012690207081921. ISSN 1012-6902. S2CID 144186372. ^ "Reverse Dieting: How to Go From Cut to Bulk Without Gaining Fat". Men's Journal. December 2017. Archived from the original on January 24, 2020. Retrieved January
24, 2020. ^ Lambert CP, Frank LL, Evans WJ (March 2004). "Macronutrient considerations for the sport of bodybuilding". Sports Medicine. 34 (5): 317-27. doi:10.2165/00007256-200434050-00004. PMID 15107010. S2CID 17233384. ^ the science and development of muscle hypertrophy, Dr. Brad Schoenfeld, page 139-140 ^ Gentil, Paulo; de Lira
Claudio Andre Barbosa; Paoli, Antonio; dos Santos, José Alexandre Barbosa; da Silva, Roberto Deivide Teixeira; Junior, José Romulo Pereira; da Silva, Roberto Deivide Teixeira; Magosso, Rodrigo Ferro (March 24, 2017). "Nutrition, Pharmacological and Training Strategies Adopted by Six Bodybuilders: Case Report and Critical Review". European Journal of
Research. 35 (9). Ovid Technologies (Wolters Kluwer Health): 2546-2551. doi:10.1519/jsc.00000000000003169. ISSN 1064-8011. PMID 31009437. S2CID 128359542. ^ "The Clean Bulk: A New Approach To Adding Offseason Muscle". Bodybuilding.com. October 16, 2016. Archived from the original on April 7, 2020. Retrieved April 7, 2020. ^ Giblin,
Chris. "Clean Bulking: for Frustrated Hard-Gainers, Clean Bulking: for Frustrated Hard-Gainers, Clean Bulking: Why You Need To Know The Dirty Truth!". Bodybuilding.com. Archived from the original on
February 8, 2023. Retrieved February 8, 2023. Archived from the original on October 29, 2021. Retrieved October 14, 2021. Archived from the original on October 29, 2021. Retrieved October 14, 2021. Archived from the original on October 29, 2021. Retrieved October 14, 2021.
human muscle fibres". European Journal of Applied Physiology and Occupational Physiology. 43 (1): 25-34. doi:10.1007/BF00421352. PMID 7371625. S2CID 28377940. ^ a b "Weight Training Intensity or Volume for Bigger Muscles?". October 15, 2010. Archived from the original on March 10, 2012. Retrieved February 24, 2012. ^ "Major Nutrients in
 Food". WebMD. Archived from the original on September 5, 2013. Retrieved August 27, 2013. ^{\circ} Manore MM, Thompson J, Russo M (March 1993). "Diet and exercise strategies of a world-class bodybuilder". International Journal of Sport Nutrition. 3 (1): 76-86. doi:10.1123/ijsn.3.1.76. PMID 8499940. S2CID 38151979. ^{\circ} Skinner R (March 2002)
 "Nutrition for Muscle Mass". Sidelines. Scholastic Coach and Athletic Director. Vol. 71, no. 8. p. 3. ISSN 1077-5625. ProQuest 208050071. Dimitriadis G, Mitrou P, Lambadiari V, Maratou E, Raptis SA (August 2011). "Insulin effects in muscle and adipose tissue". Diabetes Research and Clinical Practice. 93 (Suppl 1): S52-9. doi:10.1016/S0168-
8227(11)70014-6. PMID 21864752. Miranda L, Horman S, De Potter I, Hue L, Jensen J, Rider MH (March 2008). "Effects of contraction and insulin on protein synthesis, AMP-activated protein kinase and phosphorylation state of translation factors in rat skeletal muscle". Pflügers Archiv. 455 (6): 1129-40. doi:10.1007/s00424-007-0368-2.
 PMID 17957382. S2CID 6649224. ^ King MW. "Substrates for Gluconeogenesis". IU School of Medicine. Archived from the original on June 21, 2000. Retrieved March 11, 2007. ^ Manchester KL (2012). "Sites of Hormonal Regulation of Protein Metabolism". In Munro HN (ed.). Mammalian Protein Metabolism, Volume 4. Elsevier. pp. 229-98.
ISBN 978-0-323-14257-1. ^ Lambert CP, Frank LL, Evans WJ (2004). "Macronutrient considerations for the sport of bodybuilding". Sports Medicine. 34 (5): 317-27. doi:10.2165/00007256-200434050-00004. PMID 15107010. S2CID 17233384. ^ Samantha Heller (2004). "Protein: a guide to maximum muscle: confused? Let us separate the gristle from
the meat. (Nutrition)". Men's Fitness. HighBeam Research. Archived from the original on July 3, 2013. Retrieved February 8, 2023. [better source needed] ^ "Your nutrition problems solved; This month: pre- and postworkout nutrition, calculating protein intake and adding simple carbs". FLEX Magazine, January 2005 ^ Burd NA, Yang Y, Moore DR,
Tang JE, Tarnopolsky MA, Phillips SM (September 2012). "Greater stimulation of myofibrillar protein synthesis with ingestion of whey protein isolate v. micellar casein at rest and after resistance exercise in elderly men". The British Journal of Nutrition. 108 (6): 958-62. doi:10.1017/S0007114511006271. PMID 22289570. ^ Falcon M. "Estrogens,
Testosterone & Phytoestrogens". maxmuscle.com. Archived from the original on October 25, 2006. ^ Shippen E, Fryer W (1998). The testosterone syndrome: the critical factor for energy, health, and sexuality: reversing the male menopause. New York: M. Evans. ISBN 978-0-87131-829-9.[page needed] ^ Verboeket-van de Venne WP, Westerterp KR,
Kester AD (July 1993). "Effect of the pattern of food intake on human energy metabolism". The British Journal of Nutrition. 70 (1): 103-15. doi:10.1079/BJN19930108. PMID 8399092. ^ Bellisle F, McDevitt R, Prentice AM (April 1997). "Meal frequency and energy balance". The British Journal of Nutrition. 77 (Suppl 1): S57-70.
doi:10.1079/BJN19970104. PMID 9155494. ^ Taylor MA, Garrow JS (April 2001). "Compared with nibbling, neither gorging nor a morning fast affect short-term energy balance in obese patients in a chamber calorimeter". International Journal of Obesity and Related Metabolic Disorders. 25 (4): 519-28. doi:10.1038/sj.ijo.0801572. PMID 11319656.
S2CID 19686244. ^ Smeets AJ, Westerterp-Plantenga MS (June 2008). "Acute effects on metabolism and appetite profile of one meal difference in the lower range of meal frequency". The British Journal of Nutrition. 99 (6): 1316-21. doi:10.1017/S0007114507877646. PMID 18053311. ^ Philen RM, Ortiz DI, Auerbach SB, Falk H (August 1992).
"Survey of advertising for nutritional supplements in health and bodybuilding magazines". JAMA. 268 (8): 1008-11. doi:10.1001/jama.268.8.1008. PMID 1501305. Schroeder ET, Vallejo AF, Zheng L, Stewart Y, Flores C, Nakao S, et al. (December 2005). "Six-week improvements in muscle mass and strength during androgen therapy in older men".
The Journals of Gerontology. Series A, Biological Sciences and Medical S
of Acquired Immune Deficiency Syndromes. 41 (3): 304-14. doi:10.1097/01.qai.0000197546.56131.40. PMID 16540931. S2CID 25911263. ^ Giorgi A, Weatherby RP, Murphy PW (December 1999). "Muscular strength, body composition and health responses to the use of testosterone enanthate: a double blind study". Journal of Science and Medicine in
Sport. 2 (4): 341-55. doi:10.1016/S1440-2440(99)80007-3. PMID 10710012. ^ Lee Monaghan (2002). Bodybuilding, Drugs and Risk. Routledge. p. 145. ISBN 9781134588527. Archived from the original on April 5, 2023. Retrieved June 30, 2020. ^ Alexopoulou O, Abs R, Maiter D (2010). "Treatment of adult growth hormone deficiency: who, why and
how? A review". Acta Clinica Belgica. 65 (1): 13-22. doi:10.1179/acb.2010.002. PMID 20373593. S2CID 24874132. ^ Ahmad AM, Hopkins MT, Thomas J, Ibrahim H, Fraser WD, Vora JP (June 2001). "Body composition and quality of life in adults with growth hormone deficiency; effects of low-dose growth hormone replacement". Clinical
Endocrinology. 54 (6): 709-17. doi:10.1046/j.1365-2265.2001.01275.x. PMID 11422104. S2CID 30263334. ^ Summermatter S, Bouzan A, Pierrel E,
Melly S, Stauffer D, Gutzwiller S, et al. (March 2017). "Blockade of Metallothioneins 1 and 2 Increases Skeletal Muscle Mass and Strength". Molecular and Cellular Biology. 37 (5). doi:10.1128/MCB.00305-16. PMC 5311239. PMID 27956698. ^ Sisti, Andrea; Huayllani, Maria T.; Restrepo, David J.; Boczar, Daniel; Manrique, Oscar J.; Broer, Peter N.;
Shapiro, Shane A.; Forte, Antonio J. (2020). "Oil injection for cosmetic enhancement of the upper extremities: a case report and review of literature". Acta Bio Medica: Atenei Parmensis. 91 (3): e2020082. doi:10.23750/abm.v91i3.8533. ISSN 0392-4203. PMC 7716972. PMID 32921778. ^ MacDougall, J. Duncan; Gibala, Martin J.; Tarnopolsky, Mark A.;
MacDonald, Jay R.; Interisano, Stephen A.; Yarasheski, Kevin E. (December 1, 1995). "The Time Course for Elevated Muscle Protein Synthesis Following Heavy Resistance Exercise". Canadian Journal of Applied Physiology. 20 (4): 480-486. doi:10.1139/h95-038. ISSN 1066-7814. PMID 8563679. "Braverman, Jody (April 10, 2019). "When Do Muscles of Muscles Protein Synthesis Following Heavy Resistance Exercise".
Grow After Working Out With Weights?". livestrong. Archived from the original on September 24, 2023. Retrieved March 2, 2024. It's after you finish your workout...that your body is busy making new muscle protein. ^ Shusterman R (2012). Thinking Through the Body: Essays in Somaesthetics, Cambridge University, p. 43. ISBN 978-1107019065. ^
Lonnie Lowery (2004). "The Warrior Nerd: Overtraining or Undereating, part 1". TESTOSTERONE! NATION. Archived from the original on September 27, 2007. Retrieved February 8, 2023. ^ Mosley PE (May 2009). "Bigorexia: bodybuilding and muscle dysmorphia". European Eating Disorders Review. 17 (3): 191-8. doi:10.1002/erv.897.
PMID 18759381. S2CID 20128770. ^ Smith DJ (February 2003). "A framework for understanding the training process leading to elite performance" (PDF). Sports Medicine. 33 (15): 1103-26. doi:10.2165/00007256-200333150-00003. PMID 14719980. S2CID 2021999. Archived (PDF) from the original on August 9, 2017. ^ Abelson, Jenn; Jones, Nate;
Bauerova, Ladka (December 7, 2022). "Bodybuilders dying as coaches and judges encourage extreme measures". Washington Post. \(^\) Vecchiato, M.; Berton, G.; Palermi, S.; Aghi, A.; Ermolao, A.; Niebauer, J.; Drezner, J.; Neunhaeuserer, D. (2024). "Mortality risk in bodybuilding: A call for action to promote safe sport participation".
European Journal of Preventive Cardiology. doi:10.1093/eurjpc/zwae175.277. * "Mortality Rate Higher Among Bodybuilding, see the Bodybuilding wikimedia Commons has media
related to Bodybuilding. Retrieved from
```