



What Steroids Can Do to You!

A Complete Guide to the Use and Abuse of Steroids

By Crosier Sullivan

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About The Author

Crosier Sullivan loves body building, and keeping in shape.

He has quietly helped motivate people to take control of their health, to keep their bodies moving and their minds open to learning and discovering the world around them.

Crosier has enjoyed being a camp counselor working with juvenile delinquents and was inspired to publish "The Complete Guide to Steroid Abuse" when he became seriously aware that people needed to be educated better on the subject.

He says, "Steroids are not toys."

He is the Author of the "Complete Guide to Steroid Abuse" and is currently writing a book on "How to Stay in Shape and Eat Cake" which he hopes to release by next year.

Part-I: Introduction

1. Steroids – An Overview

Steroids are potent substances with many significant reactions on our bodies. Some of these actions are useful and provide you relief from ailments while some are harmful, causing irreversible and, at times, fatal consequences.

The effect of steroids spreads over a period and your body sometimes takes time to adjust to the new component in your system. Overall effects are wide-ranging. Steroids may promote muscular and skeletal growth, relief from unbearable pain or result in slight mood swings.

A steroid can be **anabolic** or **androgenic**, depending on its function. **Anabolic steroids** promote muscular and bone growth and development while **androgenic steroids** produce and develop masculine characteristics. Even women who take androgenic steroids in high doses experience development of masculine characteristics, like deepening of voice and growth of facial hair.

Reasons for Use

Steroids are popular with many people for various reasons. Some want to develop an excellent physique while some others feel that a well-built body will keep away molesters.

Athletes and sportspersons take anabolic steroids to increase their muscle power and endurance. They want to perform better and win accolades for themselves and their country. They want to easily surpass the results of other contestants. This focus lures some athletes to steroids but, of course, they also could suffer from the numerous side-effects of steroids.

Steroid use is done to a particular pattern - **steroid cycling**. Many bodybuilders and weightlifters have periods of use and non-use of steroids. They take the anabolic steroids for four to six weeks and then abstain from them for a similar period. This permits them to gain maximum benefits and reduce side-effects to a minimum. Such periods of non-use are usually during competitions to try to avoid detection of their steroid usage.

Some other athletes use different varieties of steroids at the same time. This is called **stacking**.

Some others start with very small doses and then begin piling up higher dosages over days and weeks. They reach a peak and then discontinue the steroids after that. They resume after abstaining from steroids for a while.

Potential Problems with Steroid Use.

There are innumerable potential problems with steroid use. High dosages and long-term use of anabolic steroids can lead to liver cancers and tumors, failure of liver due to jaundice and resultant death.

It also causes retention of fluid in your body. It increases cholesterol levels in your body which leads to heart attacks, heart ailments and high blood pressure. Your kidneys could shrivel, resulting in kidney cancer. Acne can develop on your face and other parts of your body. Your nervous system becomes weak and your hands and legs tremble which makes you feel weak and prone to strokes.

There are many more consequences of steroid intake. Men find their testes shrinking and their sperm counts drop, leading to infertility problems. They become bald and could develop prostate cancer. Men also experience the development of excess breast tissue.

Women also experience many masculine features like growth of facial hair, deepening of voice and developing baldness. Most women develop serious problems with their menstrual cycles with many not having them for six to seven months. Their uterus may shrink; the clitoris enlarges causing many fertility problems.

Teenagers should abstain from steroid usage as this causes a rapid jump into manhood in place of a gradual change. Such an abrupt jump in growth stops total maturation of the skeletal system and the natural changes of puberty are sped up. This is harmful and can cause serious physiological damage to your entire system. You can lose more than twenty years of your total life span.

Steroids may either be swallowed or injected. Such injections carry the risk of HIV infections, other infections due to needle sharing, and hepatitis B or hepatitis C. Serious psychiatric effects are common after steroid use. Sometimes, you feel good and are on a high while, at other times, you feel

at the bottom, and become seriously depressed. Sometimes, you develop a maniac-like state, leading to violent outbursts from irritations and feelings of jealousy.

Beneficial Steroids

Some good steroids like **glucocorticoids** are useful in various metabolic processes. They cure inflammation and have immuno-suppressive actions on your body. They are very useful in treating many medical conditions like arthritis, asthma, and skin conditions.

Mineralocorticoids like **aldosterone** can maintain the balance of electrolytes in your body. These steroids are supplied in low strengths in creams, sprays, and gels which are for local applications only. This way, the steroids do not enter your bloodstream or cause serious side effects. Local steroid injections are useful for treating pain and inflammation in joints and ligaments.

Doctors prescribe appropriate dosages to reduce the chance of negative effects. They only prescribe high dosages in severe cases and usually opt for regulated and gradual dosages. They discontinue steroids once you are able to continue to improve your own. This reduces your dependence on steroids to cure your ailments.

Lately, there has been a significant increase in the number of steroid users. Although it is illegal to possess or take steroids, many teenagers and others are using steroids. Sometimes, users try to take additional drugs to cut down on the negative impact and effects of steroids. This leads to further health risks and other serious problems.

Although men lead in the rate of steroid uptake, many young women are also joining the bandwagon.

Part-II: Understanding

2. What are Steroids?

Steroids are artificial compounds, which have a similar composition to the natural male hormone testosterone. They are commonly referred to as **anabolic** or **androgenic** steroids. **Anabolic** and **Androgenic** are derived from the Greek language and mean “to build” and “masculinizing,” respectively.

Naturally occurring male testosterone is responsible for developing various masculine features in males during adolescence. Some of these features are deepening of the voice, growth of facial hair, formation and development of muscles, etc.

Initially, artificial steroids were developed to help where there was insufficient testosterone in some men. They lacked proper overall development and functioning of sexual organs (this condition is medically termed hypogonadism.) The steroids were helpful in treating certain other disorders like impotence, delay in puberty, and diseases due to HIV infections as well.

Scientists soon found favorable effects of such anabolic steroids on animals. They helped in building bones and muscles. Slowly at first, their use by athletes, weightlifters, and bodybuilders increased. It built their muscles, gave them extra strength and they could perform better. The steroids are ergogenic or performance enhancers. However, usage of steroids by sportspersons is illegal and you need a doctor’s prescription to legally use them.

Most athletes who consume such steroids acclaim their effects. It helps them develop immense strength in their muscles, endurance capacity to face greater challenges, increases their power and abilities to withstand adverse track conditions, and develop better aggressiveness to combat competition. Hence, many footballers, weightlifters and athletes find enhancement in their performances due to steroids.

Many refer to steroids as juice or ‘roids. Of course, steroids are sometimes smuggled into countries or made stealthily. Different kinds of common steroids are **deca-durabolin**, **winstrol**, **oxandrin**, **anadrol**, **equipoise** and **dianabol**.

In a normal and healthy male, your body produces around two to ten milligrams of testosterone each day. This hormone activates the nitrogen content in your body, which develops your muscles. You develop a deeper voice, grow hair on your body and develop your reproductive system. This is a natural process.

Steroids do have medicinal value for anemic people and those males whose body does not produce enough testosterone by itself. **Corticosteroids**, a different category of steroids, do not have any harmful effects and help to reduce swelling of body parts. However, steroids are not needed for healthy, young people for developing their muscles.

Artificially manufactured anabolic steroids can either be injected or swallowed. Injected steroids persist longer in the body and are more easily detected for this reason.

3. Who Uses Steroids and Why?

Steroids are artificial substances containing testosterone, male sex hormone. The presence of testosterone helps in building muscles, gaining strength in them and enhancing physical capabilities. Normally, steroids are banned substances unless prescribed for medical conditions. However, many athletes, weightlifters, bodybuilders and other sportspersons take this drug to improve their performances.

Normally, adolescents should avoid steroids. Intake of steroids could harm their normal growth pattern. That's why some young athletes take steroids only after they are fully-grown - fifteen to seventeen years in girls and seventeen to nineteen years in boys. Most side-effects of steroids persist for long periods and you remove their effects quickly.

You need continuous training for over two years to begin using steroids.

Why do sportspersons use steroids?

Steroids are in common usage among different categories of sportspersons. Different sports offer different challenges. Accordingly, sportspersons use them for individual benefits, which include the following:

- Field athletes that participate in hammer throwing, discus throw, javelin, shot putting, and other games requiring good physical consistency and strength. They use steroids to enhance their physical prowess.
- Footballers want leaner body mass with better strength. This helps them to tackle the ball better and with greater velocity.
- Weight builders lift enormous weights and require maximum strength to lift them. They seek to improve strength in their hands and legs.
- Bodybuilders need less muscular mass and fat content in their bodies. They take steroids to shape their body well so that they have a fantastic, muscular body to flaunt.

- Runners and swimmers want to cover long distances easily. They want to increase their endurance capacities and perform intensively.
- Some people take steroids just to develop their looks and build muscles. They want to project a muscular body and a impressive image.
- Women athletes, in general, take smaller quantities of steroids when compared to men to match their normally smaller build.

Useful properties of steroids

Doctors often prescribe steroids for treating certain diseases like severe burns, breast cancer, and anemia. They can help to set right impotence, osteoporosis in menopausal women, liver problems in biliary obstruction, delayed puberty and some complicated issues due to HIV. It is also helpful in multiple sclerosis, rheumatoid arthritis, Crohn's disease, lupus and colitis.

Corticosteroids are artificial versions of cortisone, which can cure inflammations. This is useful in different disorders like arthritis, asthma, and other inflammations due to injuries.

Non-addictive usage of steroids is not very harmful where you take in steroids for a limited period. Thereafter, you discontinue them and you are therefore not under permanent influence of steroids.

Harmful effects

Normally, intake of steroids requires a doctor's prescription. You need proper medical guidance to understand the necessary dosage. Sometimes, even with a doctor's prescription, you may risk increased chance of heart disease, liver cancer, stroke, kidney problems, sterility, birth defects, prostate cancer, skin diseases, masculine features in women and testicular atrophy.

Their use is also responsible for some urinary tract infections and sexual dysfunction. Of course, misuse and excessive dosages of steroids sparks aggressive behavior and many psychological changes like depression. Athletes prefer using oral and intra-muscular intake of steroids through injections. Needle sharing causes many cases of infection and can result in various blood diseases like AIDS and HIV.

Such steroids may build up your muscular mass but cannot provide proportionate strength to your tendons and ligaments. Hence, these weaken and users often suffer from ligament tears and ruptures. Additionally, these artificially-enhanced muscles lack phosphate and contain higher levels of sodium and water. Your body produces minimum and optimum quantity of testosterone for use within your body. However, with the intake of extra steroids, the total quantity of steroids in your body is higher and, at times, prevents your body from producing naturally. This creates many more problems in the long run.

Anabolic steroids cause much harm to your pituitary gland and its functional capacity. You get many changes in lipoprotein levels that may continue into hypertension. Some sportspersons become more injury-prone as their skeletal frame is unable to handle a bigger physique.

4. How Do Anabolic Steroids Work?

There are many naturally secreted steroids in our body. Testosterone is a natural steroid secreted in humans. Although it is present in both males and females, the quantity is much less in females. This hormone is mainly responsible for adding masculine characteristics to your body. It leads to deepening of voice, growth of facial hair, and increase in muscles. The muscle building capacity is mainly due to the anabolic content of testosterone.

Anabolic steroids are artificial secretions, which you can have as injections or take orally; or apply as creams and gels. Doctors prescribe requisite dosages depending on your age, medical condition and the severity of your problem.

How Ingested Steroids Work

An anabolic steroid is a drug and, naturally, any drug that enters your body creates certain effects. Normal effects are of two categories; intended and unintended. Intended effects are therapeutic effects, which are necessary for your well-being. Unintended are the side-effects, or non-therapeutic effects, which work against your health. The intended effect of anabolic steroids is muscle building while there may be numerous harmful side-effects.

Every drug has its own way of working or action which works through your body's numerous receptors. When any drug enters your body at these receptors, their cells receive stimulation. They then stop or stimulate further biological activities in those areas.

Biological activity refers to physiological and biochemical activities taking place under normal conditions in your body. Drugs lack inherent effects, so they can only trigger higher activity in normal body functions or slow down body processes.

When you take in any anabolic steroid, it stimulates protein receptors of your cells. This creates new proteins in your cells leading to increases in RNA Activity or Ribonucleic Acid Activity. These new proteins increase size and strength of your muscles. The creation of new proteins is a routine function of your cells, steroids only accelerate the process.

Aspirin is an anabolic steroid and it binds or fixes to cells that are causing pain or inflammation. When you take aspirin, your pain and inflammation reduces as the aspirin attaches to the pain causing cells. However, it also causes stomach problems as it reduces or stops the production of a digestive enzyme in your stomach.

Anabolic steroids have an anti-catabolic effect. They strive to utilize protein contents extensively and minimize or totally cut off the catabolic effect of **glucocorticoids**. This leads to greater muscular strength and increased aggressiveness. You do not feel tired as easily. This psychological boost makes athletes train more and harder to achieve still better and higher targets.

Normal body testosterone has both anabolic and androgenic effects. Androgenic effects refer to deepening of voice, growth of facial and body hair, and development of male genitals. Anabolic effects are the development of bone, red blood cells, and increasing muscle strength and better neural condition.

Similarly, anabolic steroids work towards further development of muscles and associated prowess. Anabolic steroids retain this quality of improving muscular strength and, at the same time, reduce androgenic qualities. Such steroids cannot erode the androgenic properties of testosterone. They can only retard the effects for some time.

How to take in Anabolic Steroids

Anabolic steroids can be in an oral or injection form. The oral forms passes through your body system quickly and sportspersons often survive drug testing though they have been using this form of anabolic steroid. Normally, a combination of oral and injection varieties with six to twelve week cycles are popular with many. Alternating their intake with periods of abstinence allows their bodies to adjust the new effects and reduce side effects. This also provides for continuation of the production of natural hormones in your body.

A few common oral types of anabolic steroids are **oxandrolone (Anavar)**, **stanozolol (Winstrol)**, **methandrostenolone (Dianabol)** and **oxymetholone (Anadrol)**. Some anabolic steroids which are supplied in injection forms are **nandrolone phenpropionate (Durabolin)**, **testosterone cypionate**

(Depo-Testosterone), boldenone undecylenate (Equipoise), and nandrolone decanoate (Deca-Durabolin).

5. The Use of Anabolic Steroids in Sport and Exercise

Natural testosterone is a secretion of the human endocrine system. This male hormone is present in both males and females. However, characteristics develop more in males leading to their masculinity. Testosterone has androgenic and anabolic properties. Androgenic property develops secondary masculine sexual characteristics during adolescence like deepening of voice, growth of body and facial hair, and development of male genitals. Anabolic property develops muscular strength and increases bone and muscle mass and tissue.

Anabolic steroids are artificial testosterone substances that can be responsible for greater muscular strength in those who consume them orally or take injections. These drugs increase the breakup of proteins in your body, forms newer proteins and enhance your muscular abilities. Hence, athletes gain by using such muscle and strength enhancers to boost their performance at all levels.

The muscle building effect of anabolic steroids was unknown until early in the twentieth century. Scientific researchers stated that dogs developed more muscle due to testosterone intakes. In the early 1930's, scientists and doctors found positive effect of testosterone intakes on men with less natural secretions in their body. Soldiers of World War II found gains in their body weight and aggressiveness through the intake of steroids.

Slowly, athletes began steroid consumption to better their performances in competitions. Soviet wrestlers put up an exceptional performance in the 1956 Olympics. An American physician, Dr. Zeigler, came to know of testosterone intake of Soviet wrestlers through friends. He later developed a more refined form of testosterone, which is now called an **anabolic steroid**. Since then, this has been ever more widely used among athletes, sportspersons, professional sport players and high school competitors.

Athletes and coaches began using many drugs with excessive dosages without heeding any scientific risks. These methods spread like wildfire among contestants from different countries. Slowly, anabolic steroids became the ruler of world sports. Usage of higher doses often proved fatal. The International Olympic Committee banned steroids, at last, in Olympic competition in 1975. Later, the Anti-drug Abuse Act set down penalties for possession and sale of anabolic steroids. However, black-marketing of steroids is very prevalent and still on the rise today.

Recent surveys hint towards wide scale usage of steroids among different categories of athletes - sprint events, bodybuilders, weight lifters, field events and discus or javelin throwers. Female athletes

are equally proficient in using anabolic steroids. The history of drug usage indicates three categories of steroid usage in sports; individual steroid users, steroid users with governmental help and sporting organizations helping steroid users.

Countries and governments knowingly administered steroids to young athletes, promoting the usage as vitamin supplements. This was without the knowledge of the youngsters and their guardians. Such long-term usage of drugs and steroids brought many psychological and medical problems and even lead to death. The respective countries were seeking international recognition, supremacy and appreciation for their exemplary success in sports arena.

The next category of individual steroid usage to enhance personal performance helped in creating many athletes as megastars almost overnight. A classic example is Ben Johnson. Though a top class runner, he was not a very fast contestant of field and track events. He tried to make up for it by using drugs or steroids to build up muscular strength and gain international acclaim. Summer Olympics of 1988 at Seoul saw a world record by Ben Johnson. However, international recognition was short-lived. His drug tests were positive and he lost his gold medal.

Another category is sports organizations which help sports people to use steroids. This is evident in professional cycling where some cyclists use many steroids to increase their endurance capacities with the full knowledge of their supporting sports organizations. These steroids increase the red blood cell count of your body and you get greater power to cycle longer and over difficult terrain.

However, such high increases of red blood cells are harmful as the heart is unable to beat normally due to the huge number of red blood cells and eventually stops beating - and you are dead.

Recently many sports organizations have banned many drugs, stimulants, steroids, narcotics, and other masking agents which conceal usage of drugs.

Normally, urine samples of athletes are used to detect drug usage. Sportspersons need to give regular urine samples during competition. Medical professionals examine these samples, which are identified by serial numbers only - the identity of the athlete is unknown. A better examination would be through blood samples and it is not possible to tamper with anything. Sometimes, athletes do not provide their own urine samples to avoid detection of their steroid usage.

People want to have clean athletes without any steroid usage. Such drug usage is cheating all those who enjoy watching the superb performances of naturally gifted, well-trained athletes. These days, whenever there is any exemplary performance in the sporting field, many view it skeptically.

Although the sporting action deserves much credit, it tends to raise suspicion in many people's minds. They want to clarify whether the performance is a genuine one or is through use of steroids.

The use of such steroids poses immense health risks, such as heart attacks, liver disorders, infertility and mental disturbances. It leads to cancer, arthritis, and diabetes too. Many sports personalities are role models for youngsters who want to emulate them. Such steroid usage and the subsequent disgrace of sportspersons put many doubts on young minds. Hence, stringent measures are necessary for strict enforcement of drug-free and steroid free sport performances.

6. Therapeutic and Other Applications

There are various healing effects of Anabolic steroids. Doctors often recommend them in small quantities to specific patients for treating diseases like breast cancer, osteoporosis, hereditary angioedema, inflammation of body parts, anemia, thrombosis and endometriosis.

The Food and Drug Association approves usage of anabolic steroids in the following cases:

- To combat nutritional deficiencies in a AIDS wasting syndrome. Anabolic steroids help rebuild your muscles lost due to this ailment. Such steroids can be in injection form or as an oral dose - **oxandrolone**. This helps you to gain weight, fights against infection and helps you to regain your inner self after traumas. You feel physically stronger and, thereby, feel better mentally too.
- To fight against HIV infections- **Corticosteroids** and **prednisone** treat acute cases of HIV-related ulcers of esophagus or acute PCP successfully. Mineral **corticosteroids** are useful for treating disorders of kidneys and maintain blood pressure levels.
- Hormonal deficiencies in males - Testosterone therapy and **depo-testosterone** injections over two to three months boosts hormonal production in males. You can stop such treatment for a few months to allow your endocrine system to function by itself. Normally, testosterone levels fall drastically in HIV-infected men with common symptoms being impotence and low libido.
- Reduces pain in bones due to osteoporosis- Anabolic steroids help to relieve pain in your joints, bone, knees and ribs due to osteoporosis (breaking of bones) in menopausal women.
- Cures metastatic cancer in women- Anabolic-androgenic steroids serve as replacement therapies for such patients. These steroids carry inherent masculine characteristics. Therefore, while administering such steroids in women, usage needs to be restricted to minimize androgenic properties and maximize anabolic properties. Androgenic traces could develop masculine characteristics in women, if not used in proper proportion. It will also then inhibit or suppress anabolic or muscle building and other curing capacities of the steroids.
- Extreme cases of anemia - steroids offer relief and improve quantity and quality of red blood cells in anemia patients.
- Angioedema- This rare disease is normally hereditary and involves swelling of body parts. Steroids combat such inflammation.
- Male hypogonadism- Some males lack enough naturally produced testosterone in their bodies. They, therefore, do not have adequate sexual growth and development of sexual organs.

Steroids fill this gap with their androgenic properties and bring about a total overall masculine development in such males.

Some anabolic steroids find good use in veterinary cases too.

Anabolic steroids are often the preferred choice of athletes - both males and females- competing in weightlifting, football, wrestling, track and field events, swimming, cycling, and other sports which need muscular strength and abilities. Steroids increases muscular mass and strength. Additional benefits include increased aggressiveness. However, such steroids need a combination of good diet, exercises and proper training for best effect. Many athletes ignore the other specifications and may face serious and harmful side-effects of steroids.

Common steroids for therapeutic uses are **methandrostenolone (Dianabol)**, **nandrolone phenpropionate (Durabolin)**, and **stanozolol (Winstrol)**. Before administering steroids for its therapeutic values, it is necessary for doctors to do a thorough study and discussion of ailments and their symptoms in their patients. This will lay bare a clearer picture of the true ailment as many associated symptoms often could relate to different major ailments. Steroids are naturally strong medicines and administering them requires the careful and overall analysis of the whole situation.

7. Veterinary Applications of Steroids

Veterinary medical science also has had many breakthroughs in the usage of steroids. Various complications and ailments in your pets may require usage of steroids to provide relief. However, such steroid usage should not be in an indiscriminate fashion. You should avoid usage of steroids when your pet develops any complications. It should only be a last resort and in the specified dosages.

You need to be aware and discuss all potential and harmful side effects before administering any steroids to your pet. Also, weaning an animal off steroids should also follow a gradual pattern.

Corticosteroids are natural steroid secretions of your pet. These hormones have definite effects on your pet's constitution. Such **corticosteroids** are **mineral corticoids**, **androgens** and **glucocorticoids**. They are actually salts, sex hormones and sugars. This may enhance the pet's inborn immune system to protect your pet against various infections and ailments.

Steroids can be in pill or cream form or as injections. Normally steroids relieve arthritis pain in pets. It is always better for vets to prescribe these in low dosages for a very limited period. This reduces negative impacts of such steroids and allows your pet's body to adjust to steroids. Common arthritis pain in pets finds good relief in **liquid glucosamine**, which is not a steroid.

There are many side effects of using steroids. Most of them have fatal consequences. Some are wastage of body proteins, excessive thirst and potassium loss, inhibiting the body's immune system and functioning of adrenal glands. As soon as any steroid enters your pet's body as injections or in pill form, the pituitary gland is unable to be sure whether to make more hormones. The pet's brain does not send any messages to its adrenal glands and it does not make any natural hormones. This situation can be very harmful to your pet's health if not supervised by a veterinarian.

Antibiotics can kill bacteria and are useless in treating nonbacterial, viral or fungal ailments. When you administer antibiotics into your pet, it just kills all good and bad bacteria. Friendly bacteria like **Lactobacillus acidophilus** protect your pet from infections of bad bacteria and yeast. Some others prepare lactase, B vitamins, lower cholesterol levels, fight against tumors and have natural

mechanism against floral infections and ailments. All good bacteria improve digestion and maintain normal health in your pet.

However, antibiotics destroy both good and bad bacteria. Hence, antibiotics destroy this immune system of your pet, making it more vulnerable to infections and other ailments. So now, your pet is at the mercy of the inherent disease and possible infections from other ailments and yeast. **Candida albicans** is normally present in your pet's body but is unable to create any infections due to the body's immune system. However, it now spreads in the body of your pet, creating many problems by producing toxins and antigens. This leads to many neurological, endocrinologic and immunological problems. It could also lead to allergies, chemical disorders, and autoimmune disorders.

They also reduce or inhibit the vitamin supply - mainly vitamin B, A, zinc and folic acid. This leads to diarrhea and this can result in death or serious illness.

In many cases, antibiotics are in extensive use in livestock which are for human consumption. Hence, antibiotics in such livestock often go into your body. You could develop serious consequences due to such intake of antibiotics. Pet food also faces dangers of contamination through usage of such antibiotics. Animal manure is a common fertilizer, which inadvertently carries many antibiotic organisms into the soil. This contaminates grains, vegetables and fruits that grow on the soil. Most grain scraps are used for pet food. This can cause many further problems for your pet.

It is therefore advisable not to use antibiotics for curing ailments of your pet. Steroids can cause many long-term effects on your pets and harm their reproductive capacities too. Instead, you could try holistic treatments like homeopathy or herbal remedies. They never cause any harm to your pets. Their advocates say that they search for specific causes of the ailments in your pet and then set right such factors through changes in environment, allergies or nutritional supplements. It is better to have a thorough examination of your pet before deciding to accept any diagnosis and type of treatment.

8. Effects of Anabolic Steroids on Our Bodies and Health

Steroids are artificial substances to increase strength of your muscular and skeletal systems, thereby increasing your endurance capacities. Steroids contain testosterone, the male hormone.

Testosterone has both anabolic and androgenic properties. Androgenic properties lead to growth and development of secondary sexual characteristics like deepening of voice, growth of facial and body hair, and development of male genitals. Anabolic properties lead to greater muscles, better bones and overall good physique. It boosts your endurance capacity. Such anabolic properties in artificial substances are steroids.

Steroids are available as pills and as injections. They have certain medicinal properties like supporting weak hearts, providing relief to asthma and arthritis, control inflammation and reducing chances of conception. Sportspeople and athletes also take steroids to increase their muscular and bone strength. They get more energy and are able to train more. They are able to overcome set-backs in sports and earn much recognition and fame. Some people take in steroids to build a muscular body. Some women try to use it as a protective tool against molesters by building up a stronger body and look.

Therapeutic Effects of Steroids

A few positive effects of steroids are the healing effects in surgery patients. It increases their appetite with an increase in production of protein. Patients with radiation therapy take steroids to help their blood to produce bone marrow. Skeletal disorders like broken bones (due to osteoporosis) find remedial measures in steroids. However, these positive effects are very few in comparison to the possible adverse effects.

Devastating side-effects outnumber the good effects of steroids. They can cause many long-term and irreversible effects on your body and its systems which could be physical, mental, or functional. Each of them differs between males and females.

Effects in Females

Physical Effects

- Normally a woman has a natural figure with a thin waist, hips, and shapely breasts. A woman on steroids can display different physical features. The body curves become straighter, breasts shrink in size and their total physique can become very dominating, closely resembling a male.
- The soft voice of a woman is now a more hoarse and deep voice like a man.
- Growth of body hair increases with much on the face and chest. Her hairline starts decreasing like masculine baldness.
- Body skin is now coarser and harder like men. The natural softness of a woman's skin is missing.
- Her body seems to retain more water and sodium, which leads to puffed eyes and face. Acne can appear on her face and body.
- Enlargement of the clitoris or hypertrophy also takes place.
- All these physical effects are due to steroids intake and occur gradually. These changes do not revert and it is not possible to remove these effects of steroids even if you discontinue your intake of steroids.

Mental or Behavioral Effects

Steroids make women very irritable and they get angry over even minor matters. They become highly aggressive and any irritation may lead to violent outbursts. Medical professionals term this 'roid rage'.

Sometimes steroids cause severe mood swings. You are overly aware of your surroundings and people. You feel as if everyone is staring at and analyzing you. This, at times, leads to maniac behavior and you either go into depression or become overconfident.

- Such depression is very exhausting. You feel people find you very much out of place as you have excessive fat and bulky muscles. Therefore, you seem to be in the grip of withdrawal

symptoms with intermittent periods of restlessness, lack of appetite, anxiety, psychosis, boredom and you may, at times, become very violent.

- You tend to be very confused and forgetful about simple things. Sometimes, you become so unstable that you fail to understand or comprehend why you are doing some things or what is happening to you. In other words, you are mentally unstable.
- Such mental instability has a negative impact on everything, including your family, friends, social circle, job, career and all relationships. The chemical contents of steroids are responsible for such erratic behavior.

Functional Effects

- Your body now has high levels of the male hormone testosterone. Hence, you have less of sex-hormone-binding globulin, which is a liver protein. Cholesterol levels fall and you suffer from having less thyroid-binding proteins.
- Normally, your body houses female sexuality and organs. The hormonal changes put your total immune system at high risk, you are susceptible to many ailments and even minor colds may hospitalize you. This is because anabolic steroids totally shut off your anti-viral and immunomodulatory capacities. They block **corticotrophin** production in your white blood cells soon after any viral infection.
- This means that your body is unable to produce fighter cells to attack infections. You fall sick and this leads to more reactions and counter-reactions.
- Your blood pressure increases and you are more prone to hypertension. You become insulin-resistant. **Lipoproteins** or the cholesterol content in your blood increases which can lead to many cardiovascular diseases. More fat in your artery walls cause more blockages. This can result in heart ailments and heart attacks.
- Clots in blood vessels prevent your blood flowing normally. This causes myocardial infarction, hypertrophy, cerebro-vascular attacks and ailments.

- Steroids have an adverse effect on your liver causing jaundice, blood filled cysts in the liver and excessive increase of cells within the liver. This leads to liver cancer.
- Women are usually, on average, shorter and less sturdy than men are. However, intake of steroids increases your muscular strength and structure of their bones. They gain weight, but their knees and joints may be unable to bear this increase. Their tendons and ligaments suffer from frequent ruptures and tears.
- Low levels of estrogen affect their reproductive system. Their menstrual cycle suffers extensive disruptions and they miss their monthly periods for more than six months. This is due to larger amounts of testosterone in your body. It also causes lack of follicle formation and ovulation. You lose your fertility and irregular, or absence of, menstrual cycles cause irreparable damage. They are more prone to cervical cancer and uterine atrophy.
- If you take steroids during pregnancy, you risk causing severe anatomical defects to your unborn baby. The fetus does not grow fully and could develop both masculine and feminine characteristics.

Other adverse effects of steroids are muscular cramps leading to osteoporosis and arthritis, bad and smelly breath, bleeding from the nose, pain in joints and lack of sound sleep. Your weak immune system cannot resist any infection and you are very prone to HIV infections and Hepatitis B and/ or C.

Males

Physical Effects

- Anabolic steroids are artificial forms of male testosterone. However, men taking steroids get feminine effects. This is in the form of growth and development of breasts, which is gynecomastia in medical terms. This increases with greater intake of steroids.
- Higher and prolonged dosages of steroids often lead to a reduction in your sperm count. Your testes normally produce sperm. Testosterone intakes disturb this cycle and the sperm count falls due to the increase in estrogen levels. Fall in sperm count leads to impotence and other

infertility problems. There is a huge shrinkage in size of your testicles. This also causes pain and much difficulty while urinating.

- You put on weight and show bulkier and harder muscles.
- Your hairline recedes and you become more bald sooner.
- Your body retains a lot of water. This deposits underneath your eyes and on facial skin. You have a puffed face and look bloated. A small increase in water content of your body is good as it lubricates your joints, muscles, and connective tissue. However, with the effect of steroids this water and sodium levels rise excessively high within a short period. This is harmful as the ratio of water and sodium levels in your body need to be optimum. Such high levels of sodium and water lead to their settling in your skin and blood, especially underneath your skin. This gives your cheeks and eyes a puffy look. However, such deposits cause extensive harm as your blood vessels now need to transport more fluid. This increases your blood pressure.

Mental or Behavioral Effects

- Steroids usage leads to many changes in your behavioral patterns. You feel restless and irritation sets in. You become angry sooner and often have mental rages. Such rages may, at times, turn violent and you are unable to control your actions while in such a rage.
- You experience many changes in your moods. Sometimes you feel very happy and elated while other times you feel very down. Such drastic changes in your moods affect your actions.
- Your memory power falls considerably and you find it very difficult to do simple, normal things.
- Your adverse behavior and attitude pushes you away from your family, friends, and relations. You seem to be in a vicious circle, which keeps pulling you deeper and deeper into world of steroids users.

Functional Effects

- Anabolic steroids lead to poisoning of your liver. This is **liver hepatotoxicity**. Your liver is unable to process blood, which leads to a total shutdown of your entire system. Long usage of steroids lead to jaundice and your eyes and body turns yellow. Severe jaundice causes death.

Other fatal occurrences are liver tumors and blood cysts within your liver, causing its total failure.

- There is an inappropriate increase in lipoprotein levels and cholesterol. Your heart is at immense risk of various heart diseases and myocardial functions. This leads to high blood pressure.
- When blood flows at such high-pressures through your arteries, they often burst and hemorrhages occur. You suffer from heart failures and strokes. Most of these are irreversible damage and you progress more quickly towards death. Nothing can save you at this point.

Effect of Steroids on Teens

Steroids are adverse to the health of growing children or adolescents. Teen steroid users experience a fast growth in their skeletal structures and their bones, muscles grow longer and stronger faster. They become men more quickly without going through the gradual natural process of adolescence. The growth plates enlarge and close sooner without total and proper growth according to their age. There is an overall abnormal and disproportionate physical growth in these teens. This also causes harm to their vital organs. They become more plump. This puts a greater burden on their bones and joints. They are unable to bear such a heavy load and, at times, cause strong pain in their legs and joints.

Steroid intake in Athletes and its Effects

Steroids were a non-entity until the early twentieth century. Soviet weight lifters were the first ones to use steroids for better strength and muscular prowess. Slowly, it entered international circuits, then more and more athletes started using the anabolic steroids. They helped develop endurance capabilities to counter longer and harder terrain, longer tracks and heavier loads. They could perform better and earn accolades for themselves and their country in international games and competitions.

However, anabolic steroids are now banned substances at all international contests and games. Athletes that test positive with steroids lose their medals and recognition. Steroids create a negative impact on the contestants, as they are strongly addicted to steroids. They feel they are lost without steroids - are incapable of performing in the absence of the steroids. They are mentally charged but, at times, become listless and harbor no feelings or emotions due to such serious impact of steroids on their bodies and minds. The effect of steroids may shorten their life-span by around twenty years.

Because a person who uses steroids gains some rapid results for their physical body performance, they end up with a feeling of low self-esteem when they try to get off them. There is more power in

working toward a well shaped physical appearance and reaping the rewards for the results of building your muscle the "normal" way.

Steroid use is harmful and, over a long period, becomes addictive. It then becomes difficult for you to curb the craving for steroids. You may go to any extent to get money and time to get the steroids, much like a heroin addict will go for his next fix.

Infections and Gastrointestinal Problems

You are prone to various infections due to needle sharing between different users. Some steroids preparations are produced in non-sterile conditions leading to various infections like HIV, AIDS, and hepatitis. Injectable steroids sometimes develop bacterial infections and further illness. This leads to many inflammations in the inner lining of your heart. These form abscesses and cause immense pain.

Anabolic steroids lead to gastrointestinal symptoms and related problems. Many people suffer from extreme fullness of stomach, nausea, vomiting and diarrhea. These consequences are due to high and regular dosages of steroids. Often, you need to take tablets with every meal to combat these symptoms and have a hearty meal.

9. Women and Anabolic Steroids

Anabolic or androgenic steroids (AAS) are artificial testosterone components. There are many such compounds with varying forms, counter effects and effects. Some cause androgenic effects while some cause anabolic effects. Some compounds constitute both effects. They also have beneficial uses in males with hormone deficiencies.

Steroids have greater effect in women as they have lower baselines for testosterone, because women have a lesser testosterone content.

Women take anabolic steroids for various reasons. Some are -

- They strive for gender equality through use of such steroids. They can build their bodies to compete in bodybuilding competitions at a par with men.
- Others benefit from better and enhanced performances in sports and games. They are able to win international acclaim and gain much recognition.
- Some women suffer from **muscle dysmorphia**, which means having a poor body image although they are perfectly healthy. Steroids help build muscular bodies and relieve their phobias.
- A few others take steroids to increase muscular strength to protect them against molestation.

Women may have an overall feeling of a thinner body with sufficient body mass, strength, and weight. She develops greater aggressiveness with higher self-esteem and enhanced sexual drive.

There are many side effects of usage of steroids in women. Some are:

- Shrinking of breasts due to less tissue in breasts
- Excessive hair growth on their face and cystic acne on face and other body parts
- Severe disruptions of menstrual cycles with long gaps for six to seven months- **Amenorrhea** refers to long spells of stoppage of menstrual cycles. This is mainly due to a sharp fall in estrogen levels in your body. As you take in more anabolic steroids, your body gets a greater concentration of testosterone. Your estrogen levels are low and you are unable to have regular periods. Enlargement of the clitoris is another added side effect.
- Baldness and deepening or thickening of voice similar to males

Long-term usage leads to collapse of muscles and severe damage to connective body tissues. Your body joints and ligaments are unable to bear the extra weight of your muscles and bones. This often

leads to severe problems of knees and legs. Estrogen replacement therapy is then necessary. This reduces testosterone levels and relieves the pain in your knees and legs.

Liver cancer and other liver-related diseases shorten your life span by more than twenty years. You try taking steroids for better physical appearances and end by losing your life.

Increase in blood pressure leads to heart attacks and heart diseases due to hardening of arteries.

- Some lose body mass in the wrong proportions, which will be harmful in later life. You can lose your body mass through better dietary control, exercises and other simpler techniques. You can also increase body mass through various training and nutritional programs which do not pose any serious health risks.
- Shrinkage of the clitoris is due to anabolic steroids. Such shrinkage leads to more serious fertility problems.
- Anabolic steroids destroy your mental capacities and you become addicted to steroids even while you are fully aware of the risks. You are prone to wild and argumentative behavior, go into frequent depressive moods and, more or less, lack normal feelings. Sometimes, you are violent for no reason at all. In other words, steroids make you insane. You also suffer from bouts of hypertension.
- Women also lose much of their body weight, as normally women are more frugal eaters than men. Usage of steroids further lowers this capacity and you may end up with many different ailments due to eating less.

Losing body fat and acquiring muscles are two contradictory concepts. Each of them needs different methods. Gaining muscle mass and bone strength is possible through better diets with enough calories and the many essential nutrients in proper quantities, a rigid and correct exercise regimen, and full and enough periods of rest. This will trim your body fat without any serious health risks.

10. Teens and Testosterone

Testosterone is an important hormone to the human body. Testosterone is capable of many body functions like lowering cholesterol, blood pressure, body fat, and increase insulin resistance, normal heartbeats, and building muscles.

Lack of testosterone often leads to heart attacks and bouts of depression. With better bone structure, it improves your overall health, intake of oxygen, and better functioning of the immune system.

Nevertheless, excess amounts of testosterone are harmful as it leads to headaches, anxiety, irritation, and even excessive anger. When there are excess amounts of testosterone in your body, it turns into estrogen. This leads to enlargement of the prostate, breast enlargement, cancer, fall in libido and water retention. However, your body maintains regular and normal testosterone levels. The levels rise only due to artificial intake of steroids or testosterone which put your health at risk.

Testes produce larger amounts of testosterone during puberty in males. This testosterone increases in your body leading to enlargement of testicles while scrotum skin becomes thinner. You get pubic and underarm hair. The penis becomes longer and broader. Overall, your muscles develop and you gain height until your puberty period is over. Although normal age for puberty starts at thirteen, it starts late and ends later for some. However, if there are no signs of puberty even after fourteen years of age, then you may need a few shots of testosterone monthly for four to six months. You find results within a year.

There are many side effects of such testosterone intake. Some of them are:

- You gain both strength and weight.
- You may get acne and, at times, develop gynecomastia, which leads to development of excess breast tissue temporarily.
- Increase in blood pressure and cholesterol levels is common in many.
- If you take testosterone for long periods, you may get liver diseases such as liver tumors and cysts.
- Emotional and behavior changes like mood swings, irritability and depression are commonplace.

Many teen athletes take testosterone or steroids to enhance their performances. These artificial enhancers build body muscles and skeletal structure, enabling them to work more frequently and for longer periods. They sometimes take various types of steroids or they constantly increase or decrease steroids intake and at times completely go without them. This is to allow your body to adjust to varying supplies of steroids or even nil supply.

Long-term and high dosage of steroid is harmful and often leads to jaundice, breast development, liver cancer, testicular atrophy, increase in cholesterol levels and various injuries to your joints which are unable to hold the extra muscle size, stress and weight. You also tend to have many emotional changes like depression, irritation, depression, and aggressiveness. Many teens experience abnormal bone developments, stunted growth and may have mental instability. Inadvertently, you become dependent on steroids and damage or lose your natural growth and development.

Doses of artificial testosterone are harmful. There is no need to panic if you develop delayed growth during puberty. However, steroids pose long-term harmful effects on your body and mind.

Teens need to avoid them at all costs.

11. Natural Steroids – Are They Safer?

Natural steroids contain natural supplements, increase strength, and build muscles. They are at par with dietary supplements. However, they are still equivalent to anabolic steroids and can cause similar harm to humans. **Tetrahydrogestrinone (THG)** - a natural steroid - increased athletic performances as a dietary supplement. Actually, this is only an altered version of a banned anabolic steroid and is very harmful.

Artificial steroids or anabolic steroids need prescriptions from a doctor for you to buy them. There is no such prescription necessary for buying natural steroids. Both natural and anabolic steroids help increase muscle mass. There are many adverse effects of such usage too. They are:

- Higher risk of heart ailments, liver diseases, and cancer
- Aggressive behavior leading to many emotional outbursts
- Baldness, breast enlargement and infertility in men
- Deepened voice, facial hair, baldness, and menstrual cycle changes in women
- Stunted growth in teens

Natural hormone supplements or steroids like **dehydroepiandrosterone** and **androstenedione** are freely available from medical and health food stores. These are very harmful if misused. The main difference between natural and anabolic steroids lies in their manufacturing.

Anabolics are found in a chemical laboratory and are slight variations of natural steroids.

Androstenedione, a so-called natural steroid, converts itself into testosterone once inside your body. Such high testosterone levels are surely harmful.

As these dietary supplements are under regulatory acts, there is no precise testing on them. Many people feel it is fine to buy them and are unaware of the associated health risks. Many sports associations and organizations ban usage of these natural steroids while some are still unaware of its harmful effects.

A thin line defines categorization of natural and anabolic steroids. The chemical from a plant or animal is natural while, if manufactured in a laboratory, it is anabolic. Hormones in horse urine and certain plants can convert into steroids like estrogen. This compound is in large quantities in urine of pregnant mares. Some of these natural substances convert into steroids very fast inside your body while some take some time to take effect. This is the same as having a higher or smaller dosage of anabolic steroids.

This theory holds good in hormonal therapy as depression cases are few in natural hormonal therapy. It is the same with estrogen gels and lotions. They combat vaginal dryness and other menopausal problems but scientifically verified proof is low on these therapies. Science supports a natural progesterone pill - **Prometrium** and **Crinone** cream for preventing miscarriage and lowering excessive bleeding during perimenopause.

There are many natural steroids containing estrogen for menopausal women. This hormone is a natural secretion of endocrine glands in women as **estriol, testosterone, progesterone, estradiol** and **estrone**. They never occur naturally in any plants, animals, or animal products. Chemical processes make them from soy precursor or yam steroid molecules just as they occur in women.

Such hormones are then put into many small groups through micronization. Such micro-hormones find easy absorption into your system and are more effective. These may have the same harmful effects of anabolic steroids and could be the cause behind many breast cancers.

Natural steroids carry the same element of risk as anabolic steroids. They are in no way safe and you are at perpetual risk. The only difference lies in their easy availability and you may feel they are not anabolic steroids and cause no harm.

Part-III: Preventing and Treating Use of Steroids

12. Drug Testing and Societal Alternatives

The latest discoveries in the realm of medicine have brought also new complications that arise from the use of anabolic steroids. These reports are yet to create a mass awareness in the different segments of society regarding side effects. Many educational programs have been introduced to potential users to raise their cognizance about the medical risk involved in using anabolic steroids.

Often, it is seen that educational programs strongly presenting the side-effects of anabolic steroids create a credibility hiatus between the users and health professionals. Adolescent athletes are greatly enamored by the immediate effect steroids produce, even though many drug-testing programs are introduced to catch its use. Sports people, mainly athletes, are more prone to the use of anabolic steroids as they add up extra bulk of muscle and strength to their body. Use of anabolic steroid may not be easily diagnosed through drug testing methods.

Some factors like improbable weight gain and behavioral changes help a pediatrician to diagnose anabolic steroid. Other factors include acne on the back and chest, jaundice or gynecomastia. Their use is often also accompanied by a rise in blood pressure along with enhanced levels of cholesterol while the high-level of lipoprotein cholesterol reaches abnormally low limits.

Physicians have to be vigilant to diagnose the use of anabolic steroid as the user or the supplier is not going to acknowledge its use. The clinic has to handle the situation with utmost dexterity, as alienating the patient may not prove fruitful. The physician has to ward off any situation that may produce confrontation; it may negatively affect the patient's decision to continue. It is good to analyze the perspective behind its use to ensure the best remedy. A discussion, with a balanced and judicious approach, is likely to yield better results than a one-sided discourse.

The use of anabolic steroids is quite widespread, with many people inculcating the notion that steroids are essential for surviving the onslaughts of this competitive world. Many people want to enjoy the immediate enhancing effect and consciously ignore its side-effects. Drug-prevention

counseling can provide ample help to the steroid users by highlighting a way through which they can realize their sport's goals without depending on anabolic steroids.

For putting your viewpoint impressively, it is essential to have an open interaction with a balanced approach. Weighing both its benefits and disadvantages would best make your point. Anabolic steroid came under banned drugs since 1975 when the International Olympics Committee banned it. Since then, many other organizations have prohibited its use. The use, misuse and abuse of drugs have long shaken the foundations of amateur and professional sports. With the passage of time, awareness is likely to grow further. People associated with sports like baseball seem to agree on the common point that drug testing is important to bring genuine caliber to the forefront.

Doping has taken various shapes and forms, ranging from stimulants, nutritional supplements, and diuretics to blood doping and natural hormones. Some of these substances may not have yet actually been banned. There is an ongoing tussle between the newly emerging doping techniques and the drug testing technology to keep a check on them. While the doping technique has developed and it is growing further, it is becoming quite difficult to check the different manifestations of drug misuse, yet there is a need to strongly discourage its use.

A government study conducted during 1998-1999 to measure the use of anabolic steroids in adolescents revealed shocking results with approximately 2.7 percent of eighth grade students claiming to use it. Children and teens can seriously harm their future health by misusing these substances, which triggers further concern.

The most prominent side-effects of steroids are testicular atrophy, scarring acne, hair loss and greater susceptibility to develop heart disease. In today's world, excellent performance has become the driving force where every individual wishes to compete. Even many parents and coaches encourage the use of performance-enhancing substances at the risk of the child's health and well-being. The maddening desire to make it to the top has pushed the aspect of a healthy existence to the background.

It is high time to pause and think about the two aspects of performance -enhancing drugs which, on the one hand, fill you with superficial energy to perform beyond your capacity, but debilitate your potential in the end and expose you to great health hazards.

While nowadays, it is getting difficult to devise adequate tests to trace out different kinds of doping, you need to give the world your best. After all, winning is not all about reaching the zenith, but achieving it earnestly.

13. Anabolic Hormones- Adverse Effects and Remedies

Anabolic steroids are artificial hormones which help to increase strength of your muscular and skeletal systems. Normally human body produces testosterone, which is the major anabolic hormone of your body. Such testosterone has both anabolic and androgenic properties. Anabolic properties help increase your muscular strength while androgenic properties develop secondary masculine sexual characteristics like deepening of voice and growth of body hair.

Some people may not have necessary amount of testosterone in their bodies. They then need to take in artificial dosages of anabolic steroids to supplement normal supply of hormones within the body. Athletes, weightlifters, and bodybuilders take anabolic steroids to build up lean mass in their body and increase endurance levels to sustain strict exercise regimens. Steroid users need to bear with both anabolic and androgenic properties of artificial hormones if that is the way they want the effects which they seek.

Incidentally, such anabolic hormones or steroids have a few medicinal uses. Sometimes, in either injection or pill forms, they supplement testosterone deficiencies in some men, and are useful for treating certain types of anemia and build up muscular strength in those afflicted with AIDS.

However, anabolic steroids cause major adverse effects on users. These effects can be specifically put into different categories for men, women, and adolescents.

Adverse Effects of Steroids on Men

Common adverse effects of steroids in men are: -

- **Gynecomastia:** This situation produces female characteristics in men. You find development and growth of breasts in such men. However, this is reversible and they often return to normalcy after they discontinue usage of such steroids.
- **Shrinkage of Testicles:** Men experience marked shriveling of their testicles. This also leads to lower sperm count and, consequently, lower fertility rates. It often leads to impotence.

- **Baldness:** They lose much of their hair and become almost bald.
- **Voice changes:** - As feminine characteristics develop, their voice undergoes changes and becomes shriller, like women.

Adverse Effect of Steroids on Women

Change in Voice: Women develop a deeper voice and other masculine properties like growth of body hair, and they lose hair on their heads leading to near-baldness. They also find shrinkage in their breasts.

Clitoris: Their clitoris enlarges due to intake of steroids.

Menstrual periods: They experience extreme irregularities in menstrual periods. Sometimes, they do not have periods for over six months. Such situations are harmful to their health and it might lead to severe infertility problems.

Appetite: Normally, women have a smaller appetite than men do. However, with the intake of steroids, they gain a huge increase in appetite and can eat large amounts. This leads to huge increases in weight.

Adverse Effects of Steroids on Adolescents

It is normally not advisable for adolescents to take steroids. However, some teenage athletes do take such steroids. These produce extreme effects on such teenagers such as -

- **Closing of growth plates:** The teen years are the main growing period in humans. Intake of steroids during this period results in premature closing of growth plates. This is due to anabolic effects of steroids, which result in extensive and total physical growth within a short period. Growth needs to be gradual and natural. However, such unprecedented growth in a short span totally closes growth plates.

- **Acne:** Teenagers develop severe acne all over their body and face due to intake of anabolic steroids.

Overall Effects of Steroids

- **Acne:** Acne on your body and face is a common adverse effect of steroid intake. Such acne is very severe and usually reduces once you stop taking steroids.
- **Diseases and tumors of vital organs:** The **Creatine** contents in steroids cause extensive damage to your vital organs like liver, kidneys and heart. It leads to various diseases of these vital organs like cancer, tumors and cysts.
- **Cholesterol Levels:** Anabolic steroids or hormones increase **low-density lipoprotein** levels in your body, which is harmful and causes heart attacks and diseases. Additionally, it decreases levels of **high-density lipoprotein**, which is beneficial for the working of your body.
- **Behavioral changes:** You may develop drastic changes in your behavioral patterns due to intake of steroids. You become aggressive and develop quick rages. Sometimes such rage turns to a violent outburst. You are now a totally changed person with new behavioral characteristics. Sometimes, such changes lead you to depression; you become moody and sulk for long periods without any reason.
- **Dependence on Steroids:** You become extremely dependent on steroids and go to any extent to get regular supplies of steroids.
- **Infections:** Those who use steroids in injection form face additional risks through needle sharing and can contract other diseases like HIV and Hepatitis. Such infections are normally transmitted through your blood.
- Normally steroids change the balance of salt and sodium levels of your body. This leads to extensive loss of water, leading to extreme dehydration. Slight changes in salt and sodium levels are beneficial to heart patients. However, extreme changes are harmful and, at times, fatal. More people die from dehydration, and do not realize they are losing salt and potassium in dangerous levels. Regardless, if you are using steroids or not, drink a sports drink like Gatorade™ or another brand that replenishes your electrolytes.

Possible Remedies to Adverse Effects of Steroids

Intake of steroids threatens extensive harmful effects, most of which are irreversible. Still, many athletes and sportspersons use these steroids, as if they are over-the-counter multivitamins, for enhancing their performances to earn recognition for themselves and their countries. Some remedial measures to combat such effects of steroids are:

- Develop educational programs for athletes, sportspersons, trainers, coaches, and other sport organizations, highlighting the harmful effects of steroids and reduce their unrestricted usage
- Develop clear policies on use and abuse of steroids so there is no ambiguity
- Proper counselors to counsel and provide rehabilitation for drug users
- Federal control of steroids as drugs and dangerous substances
- Develop programs to instill healthy ideas in youngsters for developing their bodies without using steroids as these lead to severe problems.

In all, anabolic steroids or hormones pose great harm to your health and it is better not to use them. It is best to use them only if prescribed by medical practitioners to combat serious illnesses.

14. Legal Aspects of Steroids Use and Abuse

Prolonged usage of steroids is harmful and causes many problems in long run.

Some sportspersons use insulin or other diuretics. These dehydrate your body and disturb your body levels of water and sodium which could lead to nausea, headaches and vomiting. Many share needles for injecting steroids into their bodies. Such sharing of needles is dangerous and causes HIV and AIDS.

Therapeutic Uses of Steroids

There are a few beneficial uses of steroids. **Nandrolone phenpropionate** is effective against breast cancer, **oxymetholone** can cure aplastic anemia, and **nandrolone decanoate** is effective against anemia due to renal problems. **Stanozolol**, **oxandrolone**, **ethylestrenol** and a few other steroids are banned as there are no specific therapeutic uses for them.

Legality of Anabolic Steroids

Anabolic steroids are in the Schedule III of the Controlled Substances Act. Those substances have specific medical uses but, at the same time, are capable of causing many physical and psychological disorders in humans. It is imperative that only those persons registered with Drug Enforcement Administration have approval for distributing these drugs or anabolic steroids.

Penalties

Legally, steroids are restricted substances and possessing, selling, buying, and intake are a legal offense. Anyone in possession of such drugs should surrender them to appropriate authorities or transfer all they have to registered dispensers. **Penalties differ for possession and distribution of steroids** among others. If you only possess such steroids, **you could be in jail** for two years. Individuals with two or more related earlier convictions could have a penalty of imprisonment for three years, with or without a fine.

Illegal hoarding of drugs with the intention of supplying them to others could land you in jail for five years with a fine of \$250,000. Individuals with a similar offense in their past could face ten years imprisonment and further increases in punishments.

Use of such performance enhancers in the form of herbs and other medicines was rampant from the days of Greek Olympiads. These athletes took steroids to improve their physical prowess and earn accolades for themselves and their countries. Their spread in modern times began with Soviet wrestlers and later they found their way to international players and games through the efforts of Dr. Zeigler.

Steroids are easily available and you do not need a prescription to get them. Intake of steroids is harmful for teenagers. (See chapter on teenagers) They are harmful for young athletes who may develop certain irreversible changes in their physical looks and abilities. It could also pose serious harm to their vital organs.

Part-IV: Alternatives, Problems, and Ideas

15. Strength Training

Strength Training is a training program to increase size of your muscles. Such training is with the help of weight machines, free weights and elastic tubing. Although strength training is a part of a fitness program for sports people, it is common for young adolescents to undertake such resistance training to boost their physical looks.

The best effects of strength training are through proper coordination of different techniques of training. You need to be sure about the most suitable weight program for you. Accordingly, you can opt for particular training, necessary power or weight limits and time necessary for your total exercises. All these factors collectively decide on your results. Additionally, regularity is an important factor as you miss any positive developments in your muscular development and associated gain in weight if you discontinue the program before the end.

Strength training helps teenagers to supplement normal development of their muscles during the growing years. This training gears up the number of motor neurons in the nerves of your muscles and leads to an increase with every contraction of your muscles. It also boosts low androgen levels. Athletes, weightlifters, sportspersons and bodybuilders can perform better with regular strength training. This increases their total physical prowess leading to better performances in their sport. Regular strength training can, at times, help you to overcome muscular injuries and improve your overall health.

However, such strength training is not without any risks. Common injuries relate to your spinal region, mainly due to lifting of heavy weights. You could receive injuries on your wrists and spine if your bones are not fully developed. Such training programs do not affect your heart or other vital organs. Nevertheless, you may find a rise in your blood pressure levels due to such exercises if you suffer from hypertension.

How Should I Do a Strength Training Program?

The best way for you to start out on such strength training is after a thorough medical checkup with your doctor. You should try to follow exercise programs according to your age group. The necessary techniques and amount of weight need to be proportionate to your physical abilities. Accordingly, the duration of your programs need to be under thirty minutes initially and should be two or three times every week. You need not exceed four such sessions each week. These programs work still better with different aerobic training programs.

Teenagers would benefit from avoiding training programs which might cause harm to developing muscular systems. At first, you start with a few warm-up exercises and then proceed with light training programs without any weights. Slowly, you can proceed with a gradual increase in your exercises and then take up weights. All exercises need to address major muscles of your body thoroughly and by rotation. There should never be any undue stress on any particular group of muscles. It has been said many times that teenagers should not start any heavy weight lifting until they are 16 years old. The reason is that between 10 and 15 they are growing their bones and muscles.

If you are a teenager and you want to work out and build muscles, don't use the heavy weights. Use smaller weights and do more repetitive motion. Use resistance bands, too.

Remember, your body will let you know when you are fatigued. Don't ignore it. When you are doing repetitive motions, you do them until you feel tired from the motion. Pain is to be avoided and you gain muscle without pain, regardless of what you are told by people who use the old adage, "no pain, no gain". It's just not true.

Do not weight train every day. Do it every other day. The body works hard and needs time to repair itself.

If you are overweight, trying to make some fat disappear and get some muscle to appear to tone yourself up, use your fat as weight. Repeat some of your motions until you are fatigued. Once you get to a point where you are fatigued and the repetitions are getting too easy, then you can add a pound,

and work toward fatigue. Repeating a motion such as lifting your leg for 20 times easily without tiring is a sign that you can add a pound to your ankle weight. As a teenager, you really do not need to lift any heavy weights.

The Wall Street Journal recently reported, "Fitness experts now see strength training as safe and effective, even for pre-teens."

This does not mean to try to lift as much as you can. That can quickly lead to injuries!

As you age, your strength will increase. Adding weights to your training should be gradual.

Teenagers need to be careful before starting out on strength training and follow recommendations of general physicians and sports medicine physicians. This will prevent any accidents and undue risks on your muscular or skeletal systems. As with any exercise or training program, it is always better to have a proper warm up and cooling down sessions. In case of any injury or discomfort with any particular exercise programs, you need to address them immediately. It is risky to ignore any such warning signs or symptoms of discomfort.

Over-zealous parents may not be the best trainers for their young. If they push them too hard, the child may end up hating it instead of loving a healthy activity. It should be something enjoyed and not a rigorously unhappy parent-child time together. When you work out, you may well find your youngsters wanting to work out with you. Let them; help them with some techniques. Learn what you need to know about growing children and their muscles, and be kind.

16. What is Good Sports Nutrition?

Different athletes train for different sports and they need different diets, varying in nutritional content. However, certain basic nutrients form the backbone of any balanced diet. These are carbohydrates, proteins, fats, fluids, and vitamins and minerals. Each of these nutrients has to be in the requisite quantities to provide necessary energy and stamina for your workouts.

Your intake of nutritional elements should depend on your physical activities and exercises, which dictate your intake of different categories of foods. The basic and minimum requirements are -

Carbohydrates

Carbohydrates are energy-giving food which contribute to your energy levels during, before and after your exercises. You can take in carbohydrates from cereals, potatoes, brown bread, pasta and peas/beans. These supply necessary fuel for use during regular activities. Your body stores a converted form of unused carbohydrates as **glycogen**. Your body uses these **glycogen** deposits in your muscles and liver when the need arises.

Sports people should have enough of a supply of carbohydrates, as a shortage will make your body dig into your fat reserves to fuel your energy requirements. This leads to excessive tiredness and loss of energy.

Proteins

Proteins are bodybuilders and build up your muscles. Additionally, it also repairs and sustains different body muscles and tissues. It also enables your body to fight against diseases. Protein-rich foods are grains, nuts, peas, beans, meat, soybean and dairy products. Your body converts proteins into **amino acids** before utilization.

Proteins help to maintain the texture of your muscles and transports oxygen to different muscles of your body. It develops your capability to fight against diseases and maintains your overall health. You need to maintain optimum protein levels in your body as excess protein leads to more amino acids, which consume some of the valuable water content of your body. This could lead to dehydration. At the same time, low protein levels in your body leads to poor resistance levels and you

become easily susceptible to infections and diseases. Normally, physically active people need more proteins than people with sedentary lifestyles.

Fats

Fats provide you fuel for maintaining your energy levels. You get a good supply of fats from omega-6 and omega-3 fatty acids, which are in abundance in fish, green vegetables, flaxseed, nuts, salmon, sardines and vegetable oils like soybean, sunflower, olive and corn. Your body can store excess fats in your tissues and muscles. However, you need a basic amount of fats for your daily utilization to produce and maintain normal hormone levels, for absorbing certain fat-soluble vitamins (like Vitamin A, D, E, and K) from your food and to maintain a healthy glowing skin and good quality of your hair.

Vitamins and Minerals

Vitamins and minerals help in total body metabolism. They support different chemical reactions and utilize all necessary ingredients and nutrients from your food intake. In a way, they regulate normal functioning of your body.

Fluids

Fluids are the transport systems of your body. They carry necessary nutrients to different body parts, cool and maintain body temperatures, help in digestion of food, lubricate different body joints, maintain proper shape of your body cells, and throw out waste materials through the excretion processes. Hence, lack of enough water could lead to body dehydration and total collapse. You need to drink water or fluids very frequently to replenish water levels before, during and after exercise.

You also need a balance of electrolytes! Salt and potassium sweat out of the body at a fast rate. Drinking more and more liquid without replacing essential minerals, can cause a collapse and even death in extreme cases.

You may take sports nutrition supplements on the advice of doctors. Such sports nutrition programs help you to recoup faster after workouts, maintain and build a normal body to withstand rigors of your particular sports.

Fiber

Fiber is very important. You need at least 25 grams of fiber per day!

Fiber helps regulate your bowel movements, keeps your intestines clean by pushing old spoiling food down the intestinal tract. As you make sure you have fiber, also make sure you have water. Many older people go on to use over the counter (o.t.c.) medicine to help them have a bowel movement, when all that they need is natural fiber from whole grain breads, legumes and fruit and plenty of liquid. Eat healthy!

17. Troubles with Drug Testing

It is common for sports organizations and other relevant bodies to conduct drug testing of all participants. There are different means of testing different individuals irregularly to be able to understand whether they are using any steroids or not. This is a means of nailing down contestants getting help from drugs to unfairly clear extreme hurdles and win races and other contests.

Drugs or steroids can help them build your muscular strength and increase their endurance levels so that they are in a better position to face challenges and overcome them. However, use of steroids for such purposes is illegal. You should not artificially increase your muscular strength and build up excessive tissue.

Normally, urine samples of athletes determine their intake of steroids. You need to give your urine sample when officials demand it. Such samples may be as 'A' or 'B'. The 'A' sample undergoes drug testing at first and, if found positive, then the 'B' sample undergoes further testing. Only then is steroid usage of the athlete established.

Normal drug testing procedures can identify certain steroid users. However, many more users can evade and avoid such drug testing procedures. Some athletes cunningly evade these tests to avoid their steroid intake being detected. Some others do take steroids and still manage to stay clear during testing. Hence, there are certain inherent defects of such drug testing. These include:

- Some who use steroids can cover up steroids usage through specific techniques. Such intake of steroids goes undetected despite the stringent drug testing procedures. Even if you take in steroids daily, you cannot detect them as masking drugs cover up steroid intake.
- Some traces of steroids are totally out of your system within a day or two. Although such steroids do develop your muscles and bones, drug testing cannot always detect them. Athletes take such steroids a few days before their performances, so there are no traces of these steroids in their bloodstream at all during the events.
- Some athletes and bodybuilders use steroids as hormonal intakes. These stimulate your total body growth and work similarly as steroids. Nevertheless, these do not fall in category of steroids and hence evade detection in drug testing procedures.

- Some people undergo strength training for many years and, suddenly, you witness immense changes in their total body mass. This is never a natural phenomenon and is surely due to steroid intake but drug testing may not detect any steroid traces in their body.
- A few steroid users take in such high doses for prolonged periods stretching into years. Such people do not need further regular intakes and can sustain the effects with just a single shot in a year. They can afford to take that shot when there are no events or performances. This intake of steroids is impossible to detect through drug testing procedures and poses a huge problem.

Steroid intakes are harmful and indeed pose serious threats to all those who consume them. Drug testing methods and techniques cannot reveal all those who take steroids as there are numerous methods of evading detection. If you avoid such drug testing and come out with a negative drug test, it does not mean that you have never taken any steroids or drug-enhancers to develop your physical capabilities. You could be on drugs or steroids and still walk off without detection though the methods of detection are improving.

Such troubles with drug testing need immediate attention. Unless such drug testing procedures are foolproof, there will be no real meaning to these procedures. Athletes and sportspersons with the sole intention of winning and gaining associated popularity and recognition are ready to stoop to whatever level they need to gain their success in sport.

18. Management of Anabolic-Androgenic Steroids

Steroids have both anabolic and androgenic effects. However, you can manage such side effects of anabolic and androgenic steroids through certain specific therapies.

Hormone Replacement therapy addresses many problems associated with side-effects of anabolic and androgenic steroids and may be able to solve some problems in youngsters and athletes. It gives relief to those afflicted with prostate diseases due to intake of steroids and similar health issues.

The prostate is a male organ which grows in different phases during a total life span. Initial growth is during puberty as levels of hormones increase. The second phase of growth begins in the mid-twenties and continues for the rest of your life. However, intake of steroids upsets that growth and development of the prostate. A very fast growing and enlarged prostate is a **benign prostatic hyperplasia**.

Such enlargement leads to formation of many tissue layers around prostate. This puts pressure against the urethra and causes irritation in the bladder wall. It slowly weakens your bladder and you suffer from problems of improper passage of urine. You may experience slight trickling of urine with many stoppages and feel, at times, like urinating but are unable to do so.

Normally, both males and females produce testosterone and estrogen. However, testosterone levels are higher in males and estrogen levels are higher in females. These levels decide genders. Different cell replacements and repairs are the effect of protein content of cells. These cells receive the necessary stimulus to develop and multiply. Such growth can be either **hyperplasia** or **hypertrophy**. **Hyperplasia** is through cell multiplication by division of existing cells and **hypertrophy** is the growth of existing cells through increase in volume and size. However, such increase of the prostate gland through **hypertrophy** is very painful and harmful. Steroids produce these effects on prostate gland.

Extensive growth of the prostate gland could lead to cancer of the prostate. Steroids contain certain harmful ingredients which stimulate such cancerous growth of the prostate gland. Similar harmful ingredients are also present in red meat and other fatty substances. Hence, it is better to avoid large intake of these foods.

Normally, both natural and artificial testosterone face chemical conversions once they enter your body and circulatory system. Natural testosterone is capable of resisting various chemical reactions of your body. Artificial testosterone, or anabolic and androgenic steroids are not always capable of resisting different chemical reactions in your circulatory system. So, you need specific hormone therapy to combat this illness of the prostate gland.

In some specific cases, **nandrolone** is a more effective remedy for anabolic androgenic steroid side effects. This produces effective results in Hormone Replacement Therapy in specific males. However, you need to maintain specific measurements of your intake of these hormones during therapies to evade problems from excessive hormone levels in your bloodstream.

Important Drugs to Combat Side effects of Anabolic and Androgenic Steroids

- **Oxandrolone** is an oral drug for treating disorders due to your intake of anabolic androgenic steroids. This drug has many positive effects and enhances the normal working of your body's systems. It does not affect prostate regions and works in total tandem with different chemical reactions within your body. However, it might cause problems in long-term usage specifically for AIDS patients.
- **Boldenone** is another drug which can reduce the effects of steroids. Although slightly anabolic in nature, it does not have many androgenic properties and can provide a remedy.
- **Testosterone-OH** is another useful drug to combat prostate enlargement problems. Also, it converts into a useful androgen within your body and is doubly effective against artificial androgen levels in your body from intake of steroids.
- **Formestane** works laterally with your body's estrogen levels. It almost stops production of estrogen in your body and the different receptor sites for estrogen and progesterone. It also decreases BPH levels in our body.
- **Tamoxifen citrate (Nolvadex)** is a very effective drug. This can affect progesterone receptors in your body and can block such sites. Small, daily dosages of this drug produce enormous effects. Aborting drugs **RU-486 (mifepristone)** and **onapristone** are very effective against tumors of endocrine organs.
- **Prolactin** is a secretion in women, specifically during pregnancy and childbirth. This activates breast tissues to produce milk for the baby. However, men also produce prolactin due to increased levels of anabolic androgenic steroids in the body. This protein hormone relates to your growth hormone and is a secretion of lactotrophs in your pituitary gland. Many more glands and body cells also produce this hormone.

It is necessary to maintain normal levels of such prolactin in your body. However, due to intake of steroids, this normal level disrupts and leads to many more chain reactions in your body. **Dopamine** is a natural inhibitor of such disruptions in prolactin levels. Nevertheless, chemicals and drugs which interfere with working of dopamine could lead to many more problems.

- Other major chemicals like **GnRH**, **TRH (Thyroid Releasing Hormone)** and **VIP (Vasoactive Intestinal Polypeptide)** also regulate the duct and presence of prolactin in your body. Increases in estrogen levels are another major point for increase in prolactin levels.
- Such excessive releases of prolactin are termed **hyperprolactinemia**, a common ailment in those who use anabolic androgenic steroids. These drugs stimulate working of certain cells to produce increased levels of prolactin in your body. This disorder gains special prominence in men. This leads to a sharp drop in your sperm count, develops impotence, lack of sexual drive and the formation different feminine characteristics, a situation commonly known as **hypogonadism**. These feminine characteristics range from shrinkage of testicles to the growth and development of breasts; this is **gynecomastia**. However, men rarely lactate. Development of breasts is due to excessive fatty tissue in the chest region and a puffy appearance to nipple and areola regions. This could lead to tumors.

You can undergo a simple blood test to ascertain your serum levels and resultant feminine characteristics. Such tests are through a trained medical professional.

- A specific anti-prolactin drug is **Parlodel (bromocriptine)** and produces good results in all types of use. This is a normal drug for treatment of pituitary tumors and other sexual ailments. This has considerable effects on different dopamine receptor sites and is doubly effective with its anti-prolactin values. It has better pro-GH and pro-Leptin values to treat such patients. It coordinates treatment with **bromocriptine** to produce positive results in steroid users. Some experience a fall in blood pressure levels, congestion in nasal and sinus regions and a feeling of nausea. However, all such effects reduce with continued usage over a period.
- **Dostinex** is another effective drug for use against excessive prolactin levels and some menstrual problems. This drug does not produce any side-effects like nausea, sinus or nasal congestion. You can slowly increase dosages each week.

You can use the tide cycle to create positive effects from hormones in your body. This cycle employs the effects of different hormones and drugs to combat your side-effects from anabolic and androgenic steroids. It can reduce side-effects and increase positive effects to yield best results.

You can use **testosterone cypionate** and **nandrolone decanoate** for regular cleaning of your system to erase any negative effects of different drugs. Rotating dosages of different drugs and replacement with other drugs helps to maintain regular plasma levels in your body. This is because long-term exposure to a particular drug may make your body resistant to the effects of the drug, so you are not able to get necessary results.

It is better for you to plan for effects and side-effects of different drugs. Accordingly, you can administer the drugs necessary to combat side-effects of anabolic and androgenic steroids.

Last, but certainly not least is the recent controversy of baseball and steroids...

In an interview, Bonds said he uses **creatine** protein pills

From the ESPN.com news services

SAN FRANCISCO -- The San Francisco Giants' home run king Barry Bonds says he's used creatine supplements and protein pills, according to a televised interview.

Bonds' acknowledgment he took the legal supplements comes in the face of much criticism and scrutiny about steroid use among Major League Baseball players.

Creatine is an amino acid produced naturally by the liver and kidneys and stored in muscles. Athletes often take supplements to gain extra energy, train longer and bulk up.

"Definitely. I take supplements. I have taken creatine, protein pills and amino acids. To replenish your body is very important," Bonds told Lisa Guerrero of Fox Sports Net in an interview that was expected to air Wednesday evening.

Bonds has repeatedly denied using steroids.

Retired major league sluggers Ken Caminti and Jose Canseco have both said recently that steroid use is widespread among professional baseball players.

Bonds' agent and Giants officials could not be reached for further comment on the outfielder's supplement use.

Some players around the league have taken issue over suspicion that steroids are the reason for the offensive explosion in baseball over the last few years.

"Guys that work their butts off and they're hitting home runs, now it's because they're on steroids," New York Yankees slugger Jason Giambi said Monday. "Even injuries. A guy gets hurt, 'Oh, he's on steroids.'

"It's a little sickening to me."

Like it or not, the steroid question is hanging over baseball. Former Most Valuable Players Jose Canseco and Ken Caminiti have admitted using steroids, so now every player who has a spectacular season or bulks up is suspect. Canseco estimated that 85 percent of players use steroids.

The issue dominated the All-Star Game media session Monday, with even the scrawniest of players asked if steroids are tainting the game. And it can't help that baseball's own ad at Miller Park shows Sammy Sosa, Barry Bonds and Richie Sexson as puffed-up cartoon characters.

"It shouldn't be in the game," said Scott Rolen of the Philadelphia Phillies. "What I don't know is how you get rid of them."

While the NBA, NFL, NCAA and Olympics have random drug testing, Major League Baseball does not. But the call for testing is growing, with even the players saying it might be time.

According to a USA Today survey, 79 percent of major league players would agree to independent testing for steroids and other performance-enhancing drugs.

Players weren't that outspoken Monday, with many preferring to withhold judgment until their union makes a decision.

At a union meeting Monday in Rosemont, Ill., players discussed the owners' proposal to test for steroid use and said they would try to get a sense from teammates on what the union position should be. Union leader Donald Fehr said the issue has come up in the bargaining and will be dealt with.

"I think the majority of players are for it," San Francisco Giants reliever Robb Nen said. "I have no problem with it. You know what? Let's do it."

It's not that simple. While owners have proposed testing for steroids, the players' association has traditionally resisted random testing, saying it would violate individual rights.

Just 17 percent of the players polled back the union's stance, USA Today said. Of 750 players polled from June 12-23, 556 responded to at least one question, the newspaper said.

"We're not against it," said Atlanta pitcher Tom Glavine, the National League player representative. "We're just taking precautions and making sure it's done right. ... We need to be patient and make sure we do it right."

There are a lot of issues that need to be discussed, Boston shortstop Nomar Garciaparra said. Who would do the testing? Will results be kept private? Or will they be leaked to the media? What about false positives?

"You think it's going to be confidential? I laugh at that," Garciaparra said. "Is there anything private in this world anymore? Especially with who we are?"

But most players admit something has to be done. Steroid use might not be as widespread as Canseco claimed -- "I would bet virtually everything I have that it's not," Glavine said -- but players said they know there are some using performance-enhancing drugs.

According to USA Today, 44 percent of the players said they felt pressure to take steroids.

"It's definitely there. There are guys doing it," said Paul Konerko of the Chicago White Sox.

Even if it's only a few, it casts suspicion over everybody. The recent rise in home runs -- Roger Maris' single-season record stood for 37 years, but it took only three years for Bonds to pass Mark McGwire -- has many wondering if it's better hitters or simply better pharmacists.

The game's biggest sluggers are lightning rods for suspicion, no matter how many denials they issue. A Sports Illustrated columnist even gave Sosa the name of an independent laboratory and asked him to get tested. Sosa angrily refused.

"That was a tough spot for Sammy to be in," Houston Astros outfielder Lance Berkman said. "When you're a member of a union, you have other people to think about."

Mandatory, league-wide testing might be the only way to settle the question, Kansas City Royals outfielder Mike Sweeney said.

"If you're a player that is clean and other players are out there who are not clean, it gives the other players an unfair advantage," Sweeney said. "In Major League Baseball, they're talking about disparity, creating a level playing surface. That's one way to create it, among the players at least."

The Associated Press contributed to the report on Barry.

More Information

**Think a long time before you use steroids.
It is fine by this author if you never use steroids!**

There are many sites on the Internet on the use of steroids.

For more up to date archives of popular sites, please go to

www.crosiersullivan.com/updates

Scroll down for the glossary.

Part-V: Appendixes

19. Steroids Glossary

Adrenaline: Hormonal secretion of adrenal gland which raises blood pressure

Anabolic Steroids: The same as anabolic androgenic steroids. Artificial testosterone hormones to develop muscular movement. Though medical usage rebuilds tissues, using steroids by athletes is illegal, unhealthy, and banned.

Blending: Combining different types of drugs

Bulking up: Accumulating greater muscles with help of steroids

Cells: Simplest unit of any organism functioning independently or collectively, two main cell types are **somatic** and **germ**

Cycling: The intake of specified quantities of steroids for a specific time, stopping and then continuing.

Dihydrotestosterone: Produced during combination of testosterone and enzyme 5-alpha reductase, activating development of the prostate gland

Doping: Use of specific substances and special drugs to enhance athletic skill and feats

Ergogenic drugs: Those which improve your total feats.

Germ cells: Male reproductive cells producing sperms

High Dose Ketoconazole: Prescribed drug for curing extreme or severe hormone refractory prostate cancer

Hormone: Chemical secretion of your body, formed in a body part. Blood transports it to other body parts. It is responsible for total working of various cells and growth of additional sexual characteristics; testosterone is the male hormone.

Hormone therapy: Method of treating prostate cancer by restricting production and conversion of testosterone, as prostate cancer needs testosterone to progress to advanced stages; such restriction

reduces supply of **dihydrotestosterone** to cancerous cells. Such therapy is stopped and restarted at times.

Hydrocortisone: Steroid drug from natural secretion or artificial production. The latter is a **corticosteroid**. It supplements hormonal deficiencies and stifles immune responses, normally in combination with **ketoconazole**

Inflammation: Injury to protective tissues leading to pain, swelling, redness and loss of function of those parts.

Luteinizing hormone-releasing hormone: Hormone controlling formation of sexual hormones like testosterone. Artificial production also possible.

Megadosing: Excessive intake of steroids through injecting or as tablets.

Plateauing: When a drug stops being effective at a certain point.

Prednisone: Artificial steroid to cure different disorders and cancer types.

Prostate gland: Small gland of male reproductive system producing and supplying sperms, surrounding urinary system organs. Its main function is supplying fluid for movement of sperm during sexual intercourse.

Roid rage: Excessive anger due to use of steroids.

Secondary sexual characteristics: Specific physical features other than sexual organs differentiating males and females after attaining maturity, such as menstrual periods in females and hair on the face of males.

Shotgunning: Intake of steroids without any planning.

Somatic cells: Body cells excluding reproductive germ cells.

Sperm (semen): Reproductive cells of males formed through testicles.

Stacking: Combined use of drugs and steroids.

Steroids: Multi-faceted hormones mainly affecting the build-up and further growth of sexual organs; can be natural steroids like **testosterone** or artificial like **hydrocortisone** and **corticosteroid**

prednisone. Artificial steroids in combination with **ketoconazole** help in curing irritations and swelling.

Tapering: Gradual reduction of intake of steroids.

Testicles: Masculine reproductive glands within scrotum producing sperm and testosterone, located below and at the back of penis.

Testosterone: Primary hormone responsible for growth and continuation of derived sexual features of males, mainly produced in testicles and partly in adrenal glands.

Tissue: Similar cells functioning together to work collectively.

Urinary system: Body system functions with multiple organs like kidneys, ureter, urethra, urinary bladder and penis for overall production, collection and final elimination of urine from your body.

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