Steroid Use 101

Stairway to Steroids
Small steps in understanding Steroid Use
What are Anabolic Steroids

- Drugs made in lab, have the same chemical structure as the steroid found in the male sex hormone testosterone
- Testosterone is a natural hormone that increases muscle mass of the body
- Testosterone naturally causes changes in facial hair, deepening of voice, sex drive and development of penis/testicles
Why choose to use

- Increase strength & muscle mass
- Reduce & repair injuries
- Decrease body fat
- Improve body image
- Increase energy
- Peer pressure
- Enhance sport performance
- Lengthen sports careers
Who Uses Steroids

- Most anabolic steroid use is non-medical
- Mostly athletes to improve performance
- Body builders and mostly young males to develop more muscular appearance
History of Steroids

- Runs long & complicated
- Modern history beginning in the early 20th century
- If dig deeper can go back further to ancient Greece to understand magnitude & influence anabolic steroids have had throughout history
History of Steroids

- Original Olympic games in ancient Greece, athletes known to ingest raw animal (sheep) testicles before a competition
- Doubtful forefathers understood what they were doing but were on correct path
- In short “Sports Doping” around for thousands of years
History of Steroids

- 1931 German chemist Adolf Butenandt found a way to identify and purify the hormone androstenone (a steroid found in both male and female sweat and urine) by extracting the hormone from urine.
History of Steroids

- ...beginning of a breakthrough as the next several years would see anabolic steroids truly birthed and evolved
- Shortly after...German chemist Leopald Ruzicka developed a means to synthesize the hormone making it safe for human use
- 1935 These 2 scientists compounded the first batch of synthetic testosterone
History of Steroids

- Without a doubt the birth of anabolic steroids and Testosterone the first one
- Butenandt and Ruzicka were awarded the 1939 Nobel Prize for their work in Chemistry
- Hmmm… a Nobel Prize was awarded to anabolic steroid science…
History of Steroids

- Research continued & by late 1930’s the first injections of testosterone-propionate were administered to humans
- By 1940’s in Soviet Union, anabolic steroid use was becoming common & was the dominating force in athletics due to anabolic steroids
History of Steroids

- Dr John Ziegler, US Olympic team physician soon developed anabolic steroid Dianabol (Dbol)
- Ciba Pharmaceuticals was first to market the drug & by 1958 Dianabol was approved by the FDA for human use
- Gateway for thousands of experiments in synthesizing anabolic steroids
Performance enhancing in sports was born

- With Ziegler's breakthrough in US, & his awareness of testosterone use among Soviet athletes, US Olympic lifters would soon find testosterone and Dianabol dosing part of their routine.
- Thus gap between US and Soviet athletes closed & the age of performance enhancing in sports was born.
Impact on athletes

- Anabolic steroids had phenomenal impact on athletes & growing rapidly
- 1960s countless new anabolic steroids were synthesized
- In Germany, anabolic steroid research and development was at its peak
- Germany dominating force in sports around the world
Expansion...

- Through 1960s & into the 1980s the anabolic expansion was underway
- Isolation & altering of hormones was being perfected and options endless
Steroids in Olympics

- By 1967 anabolic steroid use was widespread among Olympic athletes, esp weight lifters.
- The International Olympic Council (IOC) banned the use of anabolic steroids.
- Shortly after, the majority of major sports governing bodies would follow.
- By 1972 the beginning of the war on steroids.
Drug testing...

- The IOC implemented a full scale drug testing program for all athletes
- Measure testosterone levels via blood or urine
- Germans ahead, testosterone that could be used and cleared in 3 days prior to testing
- Germany remained undetected for years until caught early 1990’s
World news...

- 1988 Olympic Games, Canadian sprinter Ben Johnson caught using anabolic steroids...stripped of gold
- 1988 Anti-Drug Abuse Act put anabolic steroids in more a stringent category
- Severe penalties for illegal sale or possession with intent to distribute
- 1990 Steroid Control Act labelled Schedule III along with opium, morphine
A Complex Issue

- At the same time, anabolic steroids used by the medical community for AIDS & Cancer patients
- Question?...If anabolic steroids are bad for you and will harm you if you’re healthy, how is it they are good for you if you are sick?
Why anabolic steroids?

- Anabolic steroids are hormones developed to mimic the natural hormone testosterone.

- 2 primary reasons for use:
  - Therapeutic treatment
  - Performance enhancement
Therapeutic Treatment

- Your body is lacking a particular hormone & more must be applied to meet its needs
- Or excess amount must be provided to remedy a specific condition
- Eg. Low Testosterone, most common use
- Eg. Anemia: not enough red blood cells, anabolic steroids increase red blood cells
Performance Enhancement

- Add excess amounts of specific hormones so that the effects of steroids will yield results at a greater degree
- Negative effects...influenced by genetic response, total dosing and genetic predispositions
Possible unwanted side effects

- Body changes: hair loss, body rash, breast development in men, acne, increased body hair, shrinking testicles
- Mood changes: aggression, mood swings, depression, trouble sleeping, paranoia
- Health risks: heart problems, liver damage, high blood pressure, kidney damage, decrease sex drive, fertility
Side Effects

- These risks can worsen if you have a medical condition, mental health issue, use street drugs, smoke cigarettes or excessive alcohol use.
When buying anabolic steroids

- Any steroids bought on line, or on street are not quality controlled which means there is no guarantee what is on the label is what you are getting

- Check: packaging is sealed & intact, print on label is same and clear on all items, expiry dates, lot #, rubber stopper & coverings secure, liquid in vials has no floating pieces
Supplies

- New sterile equipment needs to be used for each injection
- Sterile 2-3ml syringes
- Sterile needles: 2 needles, 1 to draw up (18-23gauge 1-1half inches) & the other to inject (21-25 1-1half inches)
- Do not use same needle twice as will get dull
Supplies

- Usually 22-23 gauge used for glutes
- Not more than 2ml of fluid into a muscle at one time as affects absorption and increase risk of abscess
- Alcohol swabs to clean injection site and the stoppers of multi-dose vials
- Biohazard containers or sharps
Remember

...to
Drawing up

- Ampoule: open & caution not to cut self, insert needle with (drawing up) tip & draw back the plunger until amount needed

- Vial: open, clean rubber stopper with alcohol swab, push needle through & inject small amount of air into vial to regulate pressure
Drawing up

- Draw the plunger back until amount of drug is in syringe
- When mixing 2 or more substances, do not mix the drugs from one bottle to another
- Remove drawing up needle (put in sharps)
- Attach new sterile injecting needle
Before injecting

- Remove air bubbles, hold syringe upward, flick barrel to move bubbles to top, push plunger slowly to get rid of air
- When can’t see bubbles, a tiny drop of drug appears at the tip, now ready
Where to inject

- Anabolic steroids should only be injected into a muscle, never a vein.
- Largest muscles buttock, hip and thigh are the best and safest.
- Remember to rotate your injection sites to avoid tissue damage in one area. If you feel a hard lump in your muscle, use different site.
Safe injecting

- Steroids work throughout the body & not just where injected, you don’t need to target specific muscles with injections
- Landmarking: glute, thigh, shoulder (page 11)
- Use new alcohol swab to clean site
- Remove plastic cap from needle
- Hold syringe like a dart
Safe injecting

- With quick movement, push needle through skin into muscle at 90 degree angle. Insert $\frac{3}{4}$ of needle so can be removed if breaks.
- Pull plunger back a little, if blood, remove needle, apply pressure to site with gauze, discard needle/syringe & start again with new injection & different site.
Safe injecting

- If no blood is drawn into syringe, continue by slowly pushing the plunger to minimize tissue damage
- After injecting, remove needle, apply pressure with gauze at site
- A small amount of bleeding from site is normal, may have bit swelling, redness, pain, itching, burning at site
- Go away 1-2 days
Risks of Injecting

Abscess

- Infection at injection site, bacteria under skin when site isn’t cleaned or reusing equipment.
- Or caused by a steroid not fully absorbed, how: inject too much at one time or needle not inserted far enough into muscle
- The drug pools in muscle and can break down tissue causing infection
Risks of Injecting

Abscess

- Symptoms: site is red, hot, painful, burning, scarring, hard lump at site or fever
- See health care provider, may need antibiotics, if not treated serious blood infection
Risks of Injecting

Pain or spasm
- Caused by incorrect injection site or using same site over & over
- Sign of damage to a muscle, tendon or ligament
- Rotate sites & proper land mark
Risks of Injecting

Hitting a nerve
- This will be painful, remove needle
- Severe nerve damage can happen

Bleeding that won’t stop
- Injecting into a blood vessel can lead to bleeding inside the muscle and visible bruising. Cause muscle pain/stiffness
Steroids & Testosterone

- Share a very special relationship...without testosterone you cannot have anabolic steroids
- All anabolic steroids owe their existence to testosterone hormone
- This makes the testosterone steroid the most important steroid of all
- With no air there is no life: With no testosterone there are no anabolic steroids
A Coexistence...Steroids & Testosterone

- There are many anabolic steroids, & within testosterone alone there are numerous forms
- How so we mix/match various steroids & testosterone?
- Any testosterone form will stack well with any anabolic steroid...while other steroids may not stack well together
Testosterone

- It is produced naturally and essentially in testicles of men
- Is the primary androgenic (masculinizing) hormone in body
- One of the most important hormones that body produces (yes women naturally produce testosterone, smaller amounts)
Testosterone…

- Key role in sexual development and performance
- Role in immune system, effects clarity of mind, focus and general sense of well being
- Steroids & Testosterone are used by more adults than ever before
What to expect from Steroids & Testosterone

- Can be bigger, stronger, leaner, harder, increase athletic performance
- Synthesized testosterone alone can provide all the above
- Fine tune goal when stack with steroids
How does body respond

- When synthesized testosterone enters the body, the natural production (of testosterone) is suppressed or slowed down as body is receiving all it needs & more.
- As production is suppressed, the testicles shrink.
- Once use is discontinued, your natural testosterone production begins again.
Cycles and Stacks

- A cycle refers to the period of actual steroid use…On-Cycle on steroids and Off-Cycle off steroids
- On-Cycle phase have countless options for steroid use
- Stacking/stacks: taking 2 or more types of steroids, mixing oral & injectable forms or 2 injectable forms=interact for greater effect
Cycles

- **Cycling**: a period of taking & then not taking steroids, thus the drug-free cycle allows the body to recover normal hormone levels (6-12 week on-cycle & an equal amount of time off-cycle)

- **Pyramiding**: taking doses in cycles of 6-12 weeks, starting with a low dose then slowly increasing it, then decreasing the amount to zero
Risk to Reward ratio

- The more you take, the greater the reward, however, the more you take, the greater the risk.
- As risks increase, this also increases the need for taking protective measures.
- Can increase the total amounts & still stay within safety.
- Will be a cut off point as risk outweighs reward.
An example of risk? Or reward?

Or addiction…
How to Discontinue Use

- Body receiving massive amount of hormones, more than is used to
- Once cycle is complete, need to help the body normalize or complications may occur
- Since natural testosterone production suppressed, natural production will begin again, but will take time for natural levels to return to normal
How to Discontinue Use

- A simple 12-16 week testosterone cycle will take about a full year to recover from if nothing is done
- If don’t come off safely, properly & effectively …worse case, natural testosterone production will not begin on its own at all
How to Discontinue Use

- When cycle comes to an end, need a Selective Estrogen Receptor Modulator (SERM)
- By their natural mode of action, SERM will stimulate natural testosterone production
- How… by stimulating the pituitary to release Luteinizing Hormone (LH) & Follicle Stimulation Hormone (FSH)
How to Discontinue Use

- Which in turn stimulates the testicles to produce more testosterone
- Without LH & FSH there is no natural testosterone production
- Or the hormone Human Chorionic Gonadotrophin (hCG) can be used to mimic LH…use must be limited & abuse damaging
Law in Canada = Illegal

Possession of a substance

4. (1) Except as authorized under the regulations, no person shall possess a substance included in Schedule I, II or III. **note that there is no IV here**

Obtaining substance

(2) No person shall seek or obtain
(a) a substance included in Schedule I, II, III or IV, or

(b) an authorization to obtain a substance included in Schedule I, II, III or IV

from a practitioner, unless the person discloses to the practitioner particulars relating to the acquisition by the person of every substance in those Schedules, and of every authorization to obtain such substances, from any other practitioner within the preceding thirty days.
Law in Canada

Punishment

7) Every person who contravenes subsection (2)

(iv) to imprisonment for a term not exceeding eighteen months, where the subject-matter of the offence is a substance included in Schedule IV; or

(b) is guilty of an offence punishable on summary conviction and liable

(i) for a first offence, to a fine not exceeding one thousand dollars or to imprisonment for a term not exceeding six months, or to both, and

(ii) for a subsequent offence, to a fine not exceeding two thousand dollars or to imprisonment for a term not exceeding one year, or to both.
Law in Canada

Trafficking in substance

5. (1) No person shall traffic in a substance included in Schedule I, II, III or IV or in any substance represented or held out by that person to be such a substance.

Possession for purpose of trafficking

(2) No person shall, for the purpose of trafficking, possess a substance included in Schedule I, II, III or IV.

Punishment

(c) where the subject-matter of the offence is a substance included in Schedule IV,

(i) is guilty of an indictable offence and liable to imprisonment for a term not exceeding three years, or

(ii) is guilty of an offence punishable on summary conviction and liable to imprisonment for a term not exceeding one year.
Buy Steroids

- Buy steroids with a prescription: have medical reason, usually low testosterone
- Buy steroids illegally: black market, most common as available & cheaper
- Buy steroids legally without a prescription: legitimate sources that are licensed to sell anabolic hormonal supplements that are safe & effective
Engage your client - Build a rapport not just a supply pick up

- Have your supplies: different needles, syringes, alcohol, sharps
- Flow in setting, discrete, respectful
- Clinic card with hours, explain services
- Ask how heard about clinic
- Ask substance using, where injecting, preference of supplies, review safe injection, provide booklet
Engage your client

- Ask nutrition & exercise routine as steroid use enhanced with relationship of all 3
- Ask sport of interest, body building, competition
- I don’t ask where getting steroids, I do ask where getting supplies, cost, how disposing
Engage you client

- Consistent staff, have some knowledge
- Some clients over time have requested STI screen
- Review that clinic has no relationship with legal implications
Few closing words

- Medically anabolic steroids are still used & used rapidly
- In athletic performance...as long as athletes desire to be the best, as long as performance is rewarded....anabolic steroid use will exist & new methods & formulas will be discovered
Now & Future

History of steroids began a very long time ago & this history is being written every day!
Resources

- Anabolic Steroids (Catie)
- Anabolic Steroids (camh)
- Steroid.com
- Medscape

- amsirko@hamilton.ca
- Ann Marie Sirko RN