



Safer Steroid Use:

Making NEPs User friendly for People Who Inject Steroids



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Overview:

1- Steroids 101

- What are steroids?
- How do they work?
- Possible Side Effects
- Types of Steroids

2- Intra-Muscular Injection

- Equipment (what to use)
- Where to Inject
- IM injection technique
- Common Mistakes
- What can go wrong

3- Sub-Cutaneous Injection

- Human growth hormone (GH or HGH)
- Human chorionic gonadotropin (hCG)
- Syringe selection
- SC injection technique

4- How to Make NEPs User Friendly

- Who uses steroids?
- Halton and Ottawa's Experience with steroid users
- Q& A- discussion

Steroids 101

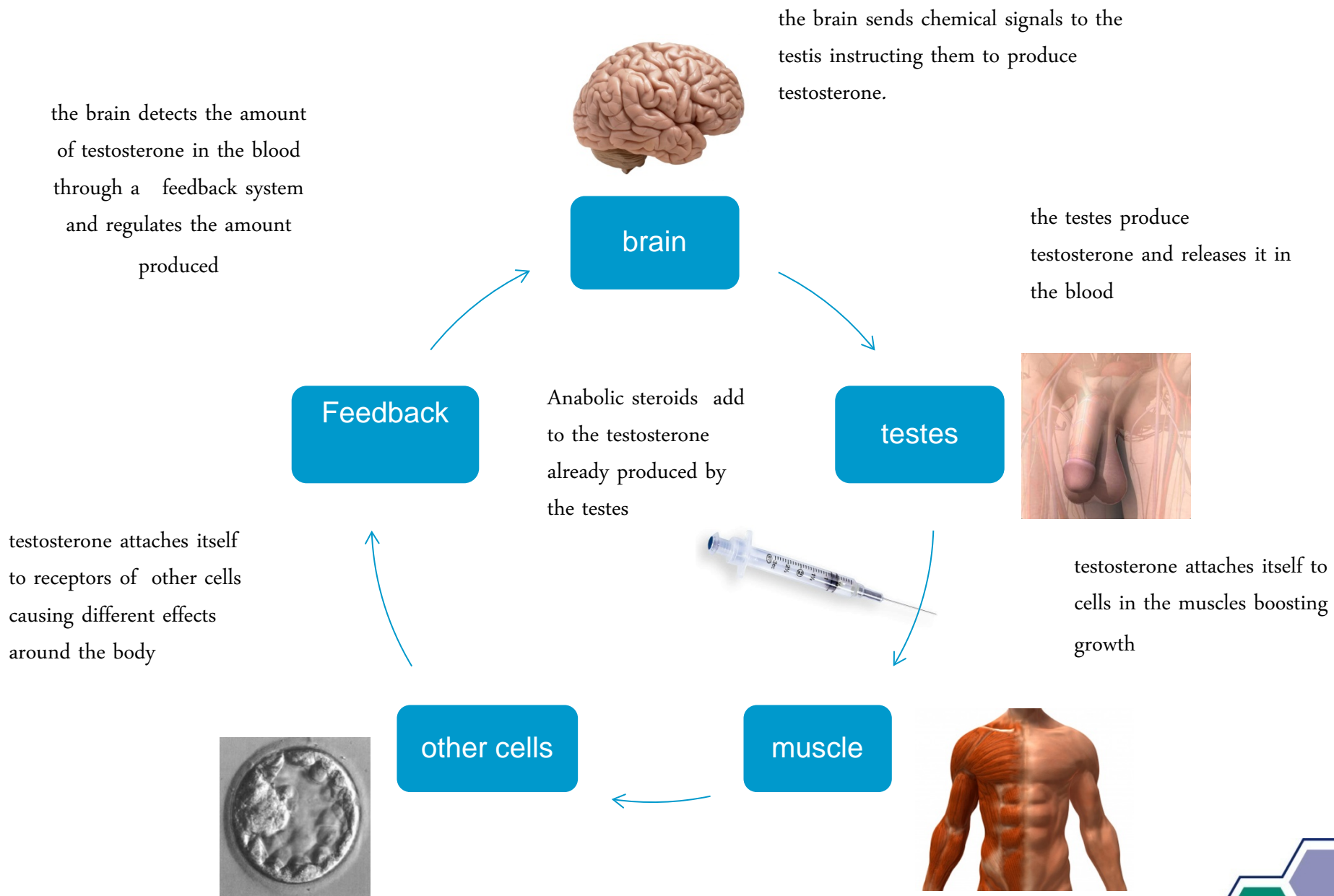
- Anabolic steroids are synthetic versions of the male hormone testosterone



Effects on the Body

- Steroids have 2 main effects on the human body:
 - An **ANABOLIC** muscle building effect
 - An **ANDROGENIC** masculinizing effect (testosterone is the hormone that naturally causes facial hair, deepening of the voice, sex drive, and development of the penis and testicles)

How do Steroids Work?





Positive Effects

- Increased muscle mass
- Increased muscle growth
- Increased muscle endurance

Steroids- Negative Effects

- All drugs can potentially cause unwanted side effects and anabolic steroids are no different. There are many possible unwanted side effects from using steroids and they can affect everyone differently.
- It's important to encourage clients who use steroids to get regular medical check-ups with their healthcare provider because some side effects are dangerous and can go unnoticed.

Steroids- Side Effects

- The general rule is the higher the dose, the higher risk for unwanted side effects.

DEPENDENCE

- Some people may become psychologically dependent on steroids and can go through **withdrawal** when they stop taking them. Withdrawal symptoms include mood swings, low sex drive, depression, nausea, headaches, sweating, tiredness, and anxiety.

Possible Side Effects- Male

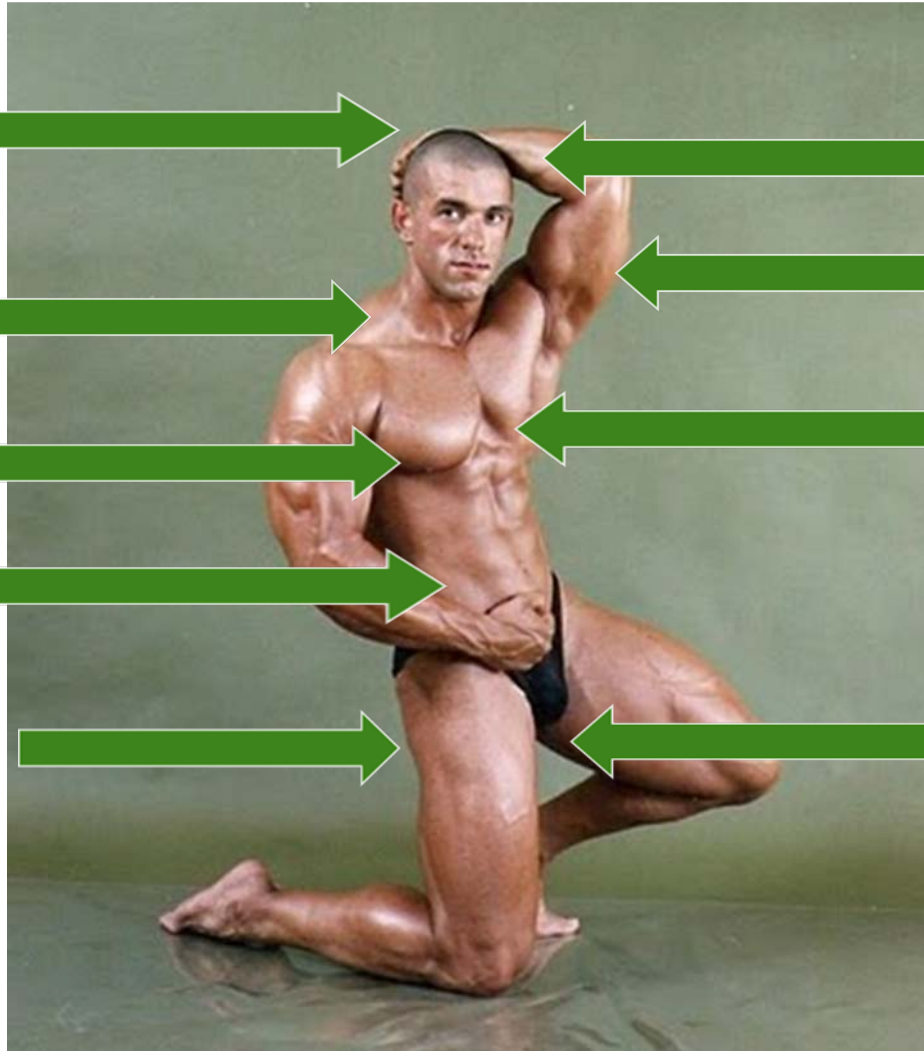
- Hair loss
- Headaches

- Increased production of oil in the skin - acne

- Gynaecomastia (breast development/enlargement)

- Liver damager
- Kidney damage

- Prostate Enlargement or Cancer



- Aggression
- Insomnia
- Mood swings

- Muscle and tendon injuries

- High BP
- Heart Palpitations
- Heart enlargement
- Atherosclerosis

- Lower sperm count
- Impotence
- Shrinking or testicles

Possible Side Effects- Female



•Reduced breast size

•Changes to the menstrual cycle
•Decreased Fertility

•Development of facial hair

•Deepening of voice
•Development of Adams apple

•Thickening of skin

•Clitoral enlargement

Women using steroids are at a higher risk for side effects because normally the female body only has a small amount of testosterone. Many side effects are the same as for men plus those listed above

Types of Steroids

- There are many different types and brands of steroids
- They can be taken in pill-form or by injection
- Usually, there is a period of use (cycle) followed by a period of no use to give the body time to adjust and heal. The lengths of these cycles and rest periods depend on the drug, the dose and how your body reacts.

Bulking Steroids

- Anadrol (oxymetholone)
- Anapolon
- Anavar (oxandrolone)
- Andriol / Testosterone Undecanoate
- Androic
- Andropen
- Averbol 25
- BONALONE (Oxymetholone)
- Clomid
- Cypioject •Testosterone cypionate
- Cypionax (Testosterone cypionate)
- Danabol
- Deca-durabolin
- Decabol
- Decadubol
- Decaject
- Dubol
- Durabol 200
- Durabolin 25
- Fizogen
- Halotestex
- Halotestin
- Laurabolin (Nandrolone Laurate)
- Mastabol
- Metanabol
- Methandriol Dipropionate
- Nandrolone decanoate
- Nandrolone Phenylpropionate
- Naposim
- Omnadren
- Oxanabol
- Oxydrol
- Primoteston
- Restandol
- SustaJect
- Testabol (Testosterone Cypionate)
- Testabol Enanthate
- Testabol Propionate
- Testen-250
- TESTENON
- Testex Elmu Prolongatum
- TestoJect / 4x testosterone blend
- Testosteron Depo
- Testosterone cypionate
- Testosterone Enanthate
- Testosterone Propionate
- Testosterone suspension / Aquaviron
- Testoviron
- TESTOVIS / testosterone-propionate
- Trenabol
- Tri-Trenabol 150 BD
- Turanabol 10mg

Cutting Steroids

- Anadiol Depot, Ilium
- Boldabol / British Dragon
- Bonavar / Oxandrolone
- Cetabon (anabolic formula)
- Danabolan
- Equipoise
- Fluoxymesterone
- Stanabolic
- Lasix (furosemide)
- Mastabol
- Masteron
- Orabolin / etylestrenol,
- Parabolan- trenbolone acetate
- Primobol
- Primobolan
- Primoject
- Stanabol injectable (Stanozolol)
- Stanoject / Stanozolol
- STANOL (stanozolol)
- Stanol
- STANOZOLOL
- Testolic - testosterone propionate
- TESTOPIN
- Trenabol
- Viormone
- Voltaren 75
- Winstrol / stanozolol
- Winstrol

Types of Steroids

- The 3 main injectable categories include:
 - Water Based
 - Oil Based
 - Powder (Reconstituted)

Steroids Risks

- Any steroids bought on-line or on the street (underground) are not quality controlled. There is no guarantee that what is on the label is actually in the container. It is dangerous to buy loose tablets or ampoules/vials.
- What to look for:
 - packaging is sealed and intact
 - print on the labels is the same and clear on all ampoules/vials
 - the expiry date should be valid
 - all ampoules/vials in the pack should have the same lot number and the same expiry dates
 - rubber stopper and metal covering are secure
 - liquid in the ampoules/vials is clear and there are no floating bits
 - All ampoules/vials look the same and have the same amount of liquid

IM Injection- Equipment

- To prevent infection & the risk of HIV and Hepatitis transmission, NEW STERILE supplies should be used for each injection
- Steroids are injected intramuscularly NOT intravenously
- You should not inject more than 2 ml of fluid into a muscle at one time. Injecting more than 2 ml affects how the drug is absorbed AND increases the risk of infection.

IM Injection- Equipment



1- A sterile syringe -a 2-3 ml syringe

2- **Sterile Needles** -1 needle to draw up the solution from the vial or ampoule and another to inject the drug into the muscle. (You don't want to use the same needle twice because it can get dull)

- a. An 18-23 gauge needle that is 1-1.5" long to draw up the drug (the "drawing up" needle)
- b. A 21-25 gauge needle that is 1-1.5" long to inject into the muscle (the "injecting" needle)

IM Injection- Equipment

Tip:

- The thickness of the needle is measured in gauges (the smaller the gauge the thicker the needle). The needle must be THICK enough for the drug to pass through (oil based steroids need a thicker needle) and LONG enough to reach into the muscle (if injecting in the hip or buttock a longer needle is needed)

3- Alcohol swabs

4- A biohazard container

Where to Inject

- Anabolic steroids should only be injected into a muscle, never a vein. The largest muscles (hip, buttock and thigh) are the best and safest places to inject.
- Injection sites should be rotated to avoid tissue damage in one area. If a hard lump is felt in your muscle, a different injection site should be used.
- Since steroids work throughout the body and not just where they are injected, specific muscles do not need to be targeted with injections.

The 4 Recommended Sites for IM injections

- 1- The Ventrogluteal Muscle (Hip)
- 2-The Dorsogluteal Muscle (Buttocks)
- 3-The Deltoid Muscle (Upper Arm)
- 4-Vastus Lateralis Muscle (Thigh)

Landmarking-The Ventrogluteal (VG)

- This is the safest muscle for injection because there are no major nerves or blood vessels nearby.
- It can be difficult for clients to landmark on themselves, it's best to have a friend or healthcare worker help landmark the site for the first few times.
- Place the palm of the opposite hand (right hand for left hip, left hand for right hip) over the end of the leg bone (greater trochanter of femur) and the index finger on the bony part at the front of the pelvis (anterior superior iliac spine). Then spread the middle finger out towards the top of the hip bone (iliac crest), the injection site is in the 'V' the fingers make.

Landmarking- The Ventrogluteal (VG)

INJECTION SITE

iliac crest

anterior superior
iliac spine

greater trochanter
of femur

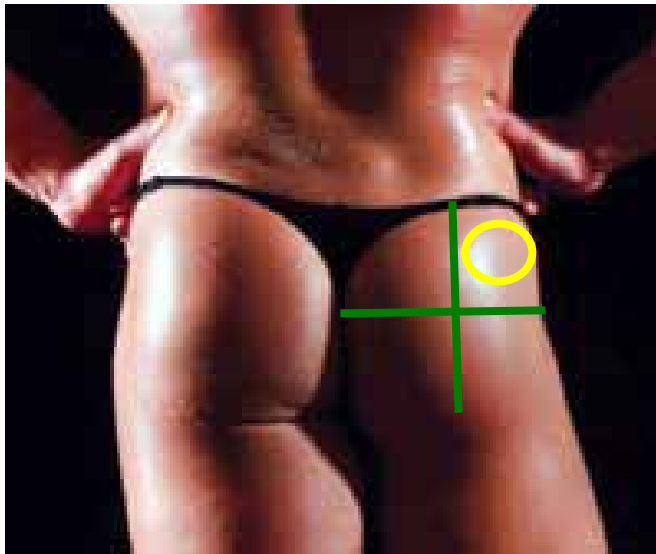


Landmarking – The Dorsogluteal

- Divide the buttock into four blocks, inject in the upper outer quadrant in either the left or right buttock
- The sciatic nerve is located in the centre of each buttock (shown in red). Hitting the sciatic nerve is very painful and can cause permanent nerve damage.



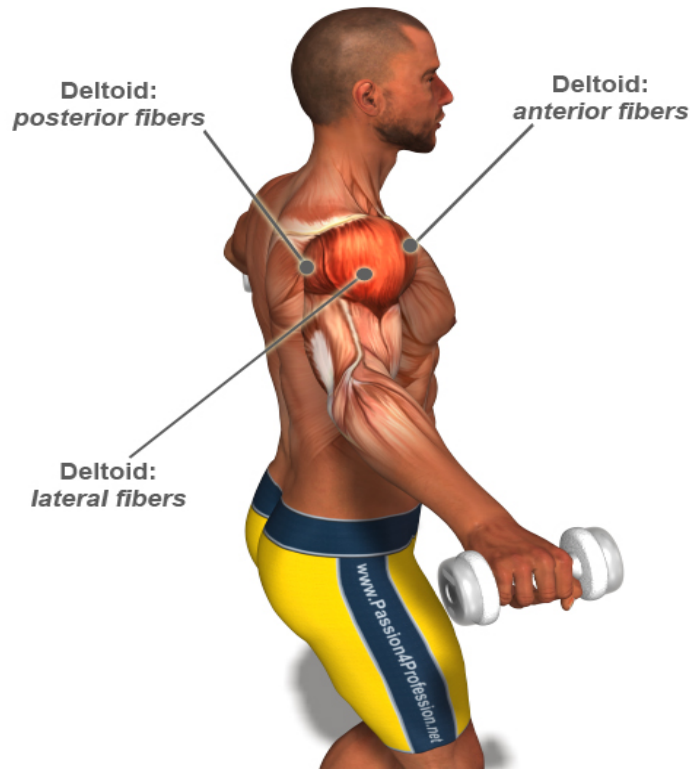
Landmarking- Dorsogluteal Muscle



Inject in the upper
outer quadrant



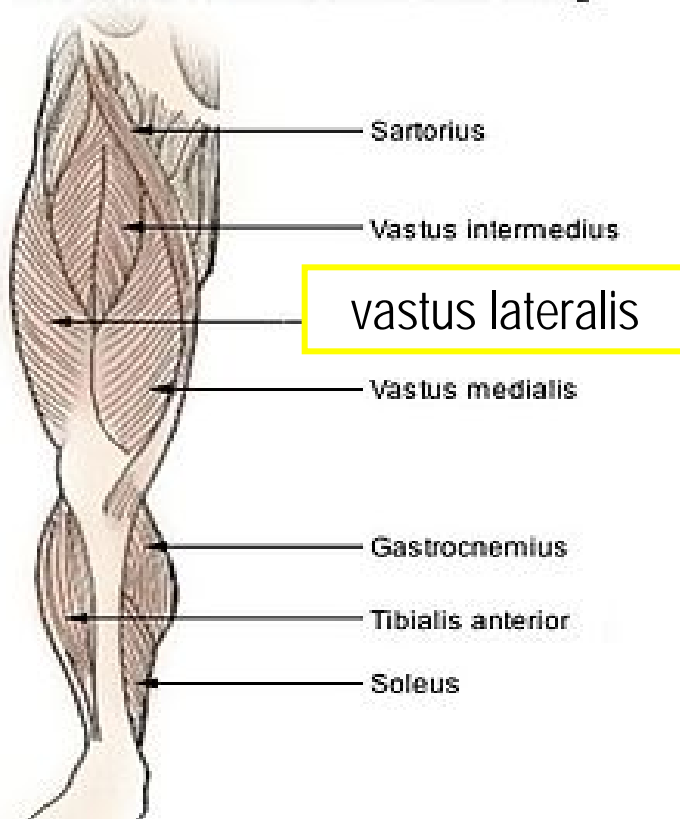
Avoid the sciatic nerve path
shown in red



Landmarking -The Deltoid

Find the tip of your shoulder bone and inject three fingers down. This is not the best injection site because it is a smaller muscle. Injecting here can cause more damage and pain.

Muscles of the Lower Extremity

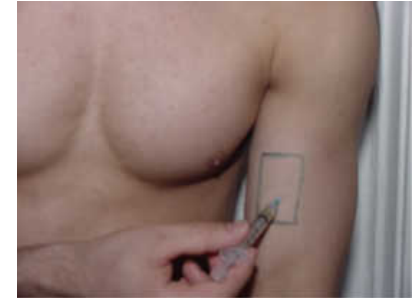


Landmarking -The Thigh

Inject in the vastus lateralis (the middle outer muscle) of either thigh.

IM Injection- Muscles to avoid

- Triceps
- Biceps
- Chest



- These muscles are too small to absorb the amount of steroid injected

IM- Injection Technique

- 1- Wash hands before handling any injection equipment.
- 2- Use a new alcohol swab to clean the injection site area (Rub the area for at least 30 seconds).
- 3- If using a multi-dose vial, the rubber stopper should be cleaned with an alcohol wipe before drawing up the drug.
- 4- Draw up desired amount of drug, remove any air bubbles
- 5- Hold the syringe like a dart and slightly spread the skin of the injection site using your other hand.
- 6- With a quick movement, push the needle through the skin and into the muscle at a 90 degree angle. Only insert $\frac{3}{4}$ of the needle so it can be removed easier if the needle breaks.

IM- Injection Technique

- 7- Pull the plunger back a little bit, if blood is drawn into the syringe, remove the needle quickly, and apply pressure for a minute using a cotton ball. Discard this needle in your biohazard container and start over preparing a new injection and using a different site.
- 8- If no blood is drawn into the syringe, continue with injection by slowly pushing the plunger to minimize tissue damage.
- 9- After injecting, remove the needle quickly and apply pressure for a minute with a cotton ball where the needle was injected.

IM- Injection

- A small amount of bleeding from where the needle broke the skin is normal. You may also have a bit of swelling, redness, itching or burning at the injection site, but this should go away in 1 or 2 days. If the site is still red and hot after 2 days, seek medical attention.
- Gently massage the injection site to help distribute the steroid.

Common Mistakes – IM Injecting

- Not cleaning the vial or injection site prior to injection
- Not injecting deep enough
- Improper landmarking
- Targeting specific muscles with injections

What Could Go Wrong?

Abscesses

- An abscess is an infection at the injection site.
- Abscesses can be caused by bacteria that get under the skin from not cleaning the site before injecting or from re-using injection equipment.
- They can also be caused by a steroid that is not fully absorbed from the injection site. This can happen when too much is injected at one time or the needle isn't inserted far enough into the muscle (the drug pools in the muscle and can break down the tissue causing an infection).
- Symptoms of an abscess are an injection site that is red, hot, painful/burning; scarring or a hard lump at the site; or a fever.
- Many abscesses need special treatment or antibiotics. If an abscess is not treated, a more serious infection of the blood can occur (sepsis).

What Could Go Wrong?

Pain or spasm

- Pain or spasm can be caused by not injecting in the right place or using the same injection site over and over.
- Pain can be a sign of damage to a muscle, tendon or ligament.
- Lasting muscle pain or spasm can end up affecting how well the muscle works.
- Remind clients to rotate sites and take the time to find the right place each time they inject.

What Could Go Wrong?

Hitting a nerve

- If a nerve is hit, it will be painful. If this happens, the needle should be removed right away.
- Severe nerve damage can happen, leading to permanent damage or paralysis.

What Could Go Wrong?

Bleeding that won't stop

- Injecting into a blood vessel can lead to bleeding inside the muscle and visible bruising.
- This can cause muscle pain and stiffness.
- Remind clients to make sure the needle is not in a blood vessel before injecting.

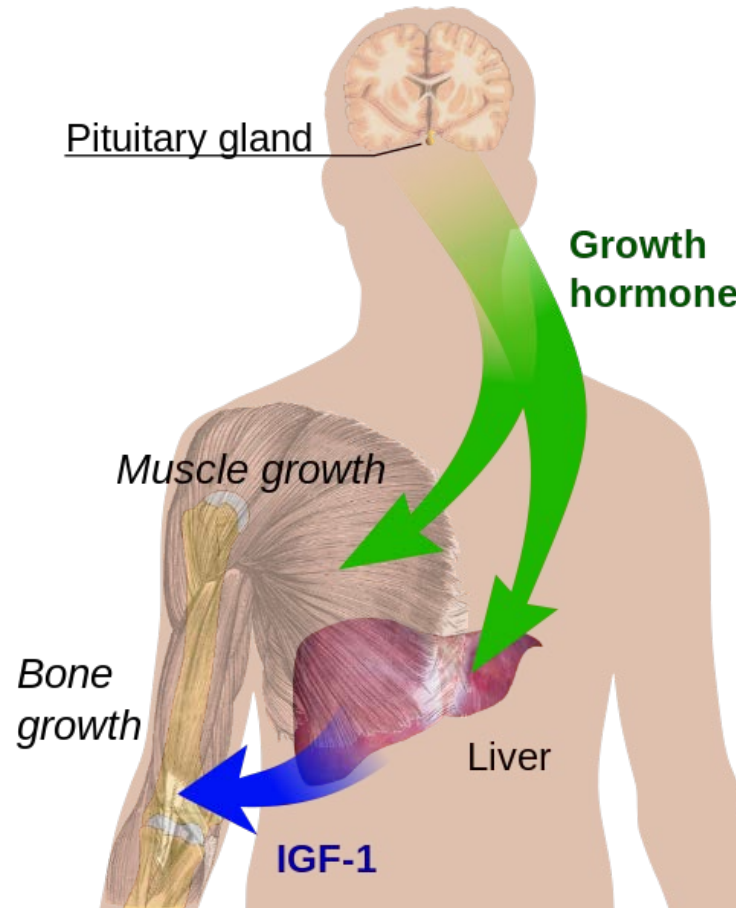
Sub-Cutaneous (SC) Injection

- HGH or GH – Human Growth Hormone
- hCG – Human Chorionic Gonadotropin

HGH – Human Growth Hormone

- Synthesized, stored, and secreted by the pituitary gland
- Stimulates growth, cell reproduction, and regeneration – anabolic effect
- Most widely known effect - increases height during childhood and puberty

HGH – Human Growth Hormone



Prescribed Uses of HGH

Children

- Turner's syndrome, a genetic disorder that affects a girl's development.
- Prader-Willi syndrome, an uncommon genetic disorder causing poor muscle tone, low levels of sex hormones, and a constant feeling of hunger.
- Chronic kidney insufficiency.
- Children born small for gestational age.

Adults

- Short bowel syndrome, a condition in which nutrients are not properly absorbed due to severe intestinal disease or the surgical removal of a large portion of the small intestine.
- HGH deficiency due to rare pituitary tumors or their treatment.
- Muscle-wasting disease associated with HIV/AIDS.

HGH Use - Body Builders and Athletes

- to build muscle and improve athletic performance

Possible Side Effects of HGH Use

- nerve, muscle, or joint pain
- swelling due to fluid in the body's tissues (edema)
- carpal tunnel syndrome
- numbness and tingling of the skin
- high cholesterol levels
- HGH can also increase the risk of diabetes and contribute to the growth of cancerous tumors

hCG – Human Chorionic Gonadotropin

- Hormone produced during pregnancy by the developing placenta – after conception
- Promotes and maintains the corpus luteum at the start of pregnancy – enriches the uterus so it can sustain the fetus
- hCG test can be used to see if a woman is pregnant or as part of a screening test for birth defects
- Produced by some cancerous tumors – can indicate cancer of the testes in men or abnormal tissue growth in the uterus in women
- Similar to luteinizing hormone (LH) produced by the pituitary gland in males and females

Prescribed Uses of hCG

- Because of its similarity to LH – used primarily in fertility treatments
- To induce ovulation in the ovaries
- To increase testosterone production in the testes

hCG Use as an Anabolic Adjunct

- Used in combination with various anabolic steroids – usually used at the end of a cycle of steroid use or between cycles - can be used during a cycle
- Because the uses of steroids causes the body to shut down its own production of testosterone – hCG is used to maintain or restore testicular size and normal testosterone production
- mimics LH and triggers the production and release of testosterone by the testes

Sub-Cutaneous Injection - Equipment

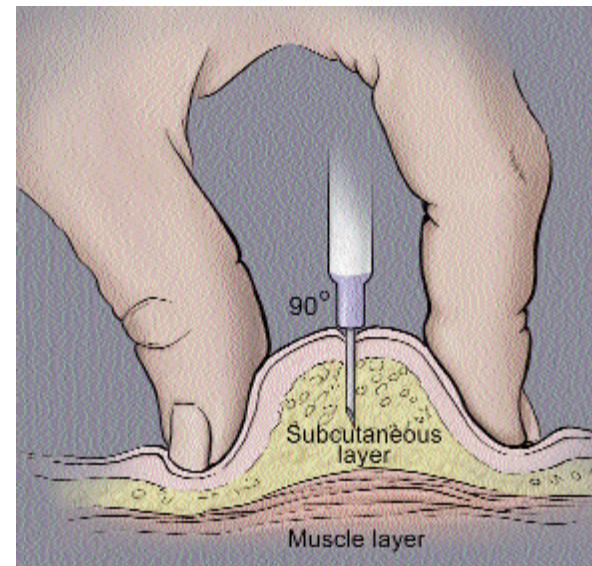
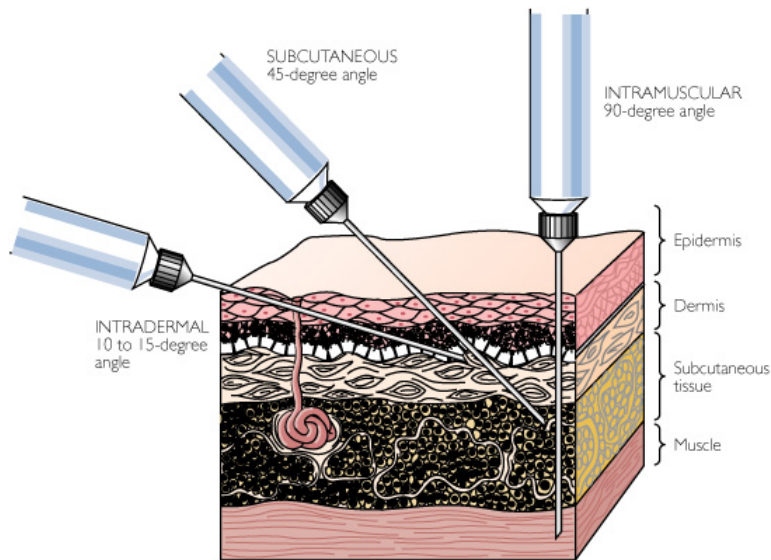
- 28, 29, or 30 gauge insulin syringe
- 1cc or ½ cc
- Alcohol swabs
- Vial of sterile water for injection or bacteriostatic water
- Sharps container



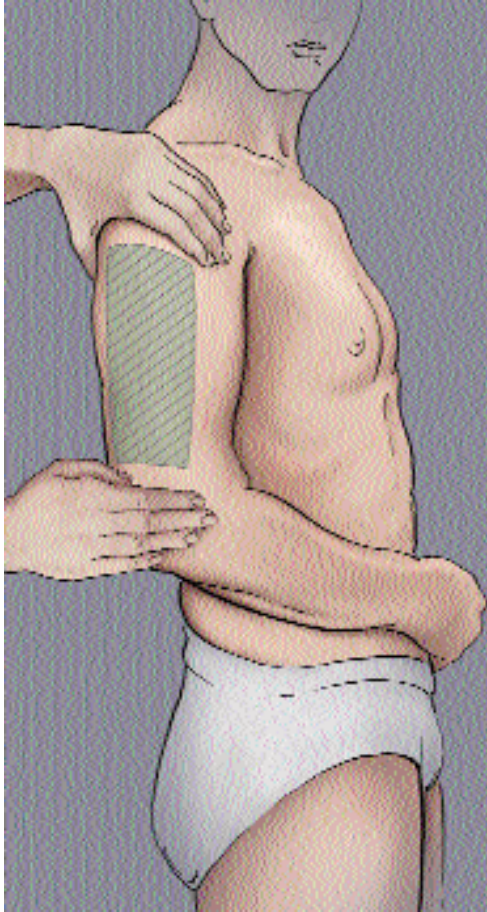
* bacteriostatic water is sterile water for injection with 0.9% benzyl alcohol added as a preservative

Sub-Cutaneous Injection

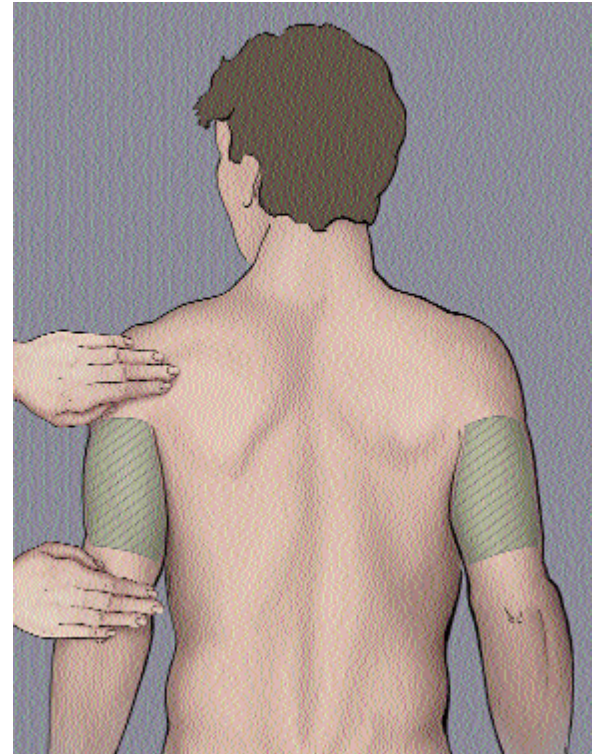
- A subcutaneous injection is given in the fatty layer of tissue just under the skin.



Sub-Cutaneous Injection Sites

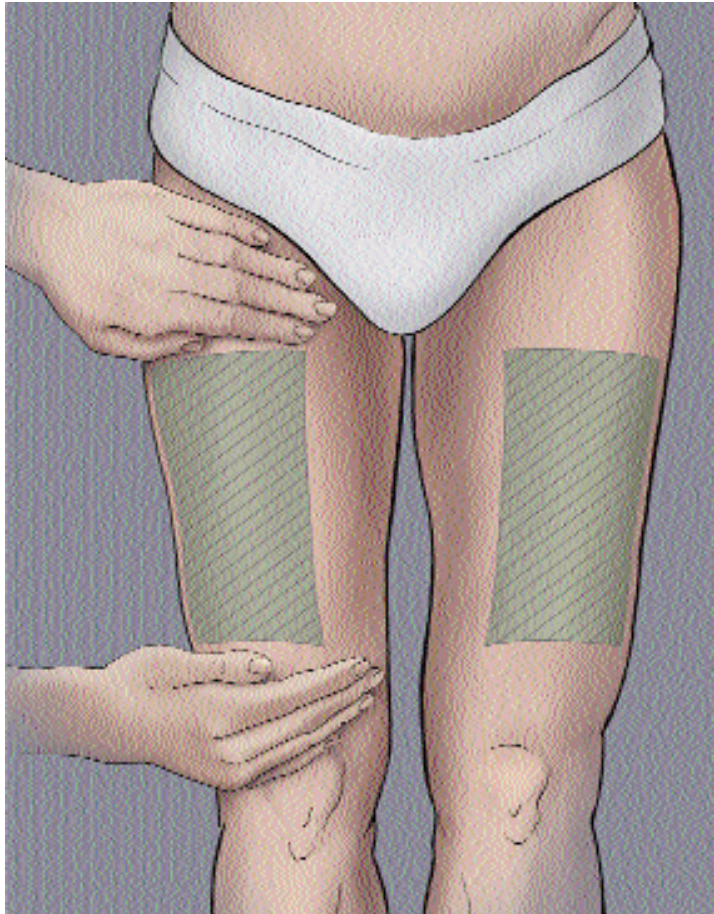


the side of the arm

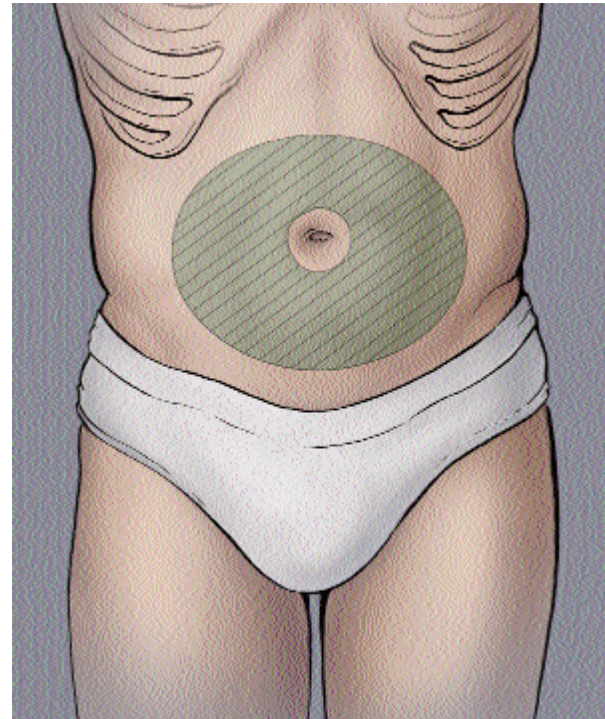


the back of the arm

Sub-Cutaneous Injection Sites



The front of the thigh



Sites on the abdomen

Sub-Cutaneous Injection

1. Clean the top of the vial and the injection site with alcohol swabs
2. Invert the vial and draw up the solution
3. Remove any air bubbles
4. Hold the syringe in one hand like pencil or a dart.
5. Grasp the skin between the thumb and index finger with your other hand and pinch up.
6. Quickly thrust the needle all the way into the skin. Do not “push” the needle into the skin slowly or thrust the needle into the skin with great force.

Sub-Cutaneous Injection

7. Insert the needle at a 90 degree (right) angle. This angle ensures that the medications will be injected into the fatty tissue (if there is little SC fat on thin skin, you can use a 45 degree angle)
8. After the needle is completely inserted, release the skin that you are grasping.
9. Press down on the plunger to release medication at a slow, steady pace.
10. As the needle is pulled out of the skin, gently press with a cotton ball or tissue. Pressure over the site while removing the needle prevents skin from pulling back, which may be uncomfortable (also helps seal the punctured tissue and prevents leakage)
12. Dispose of the needle in a sharps container

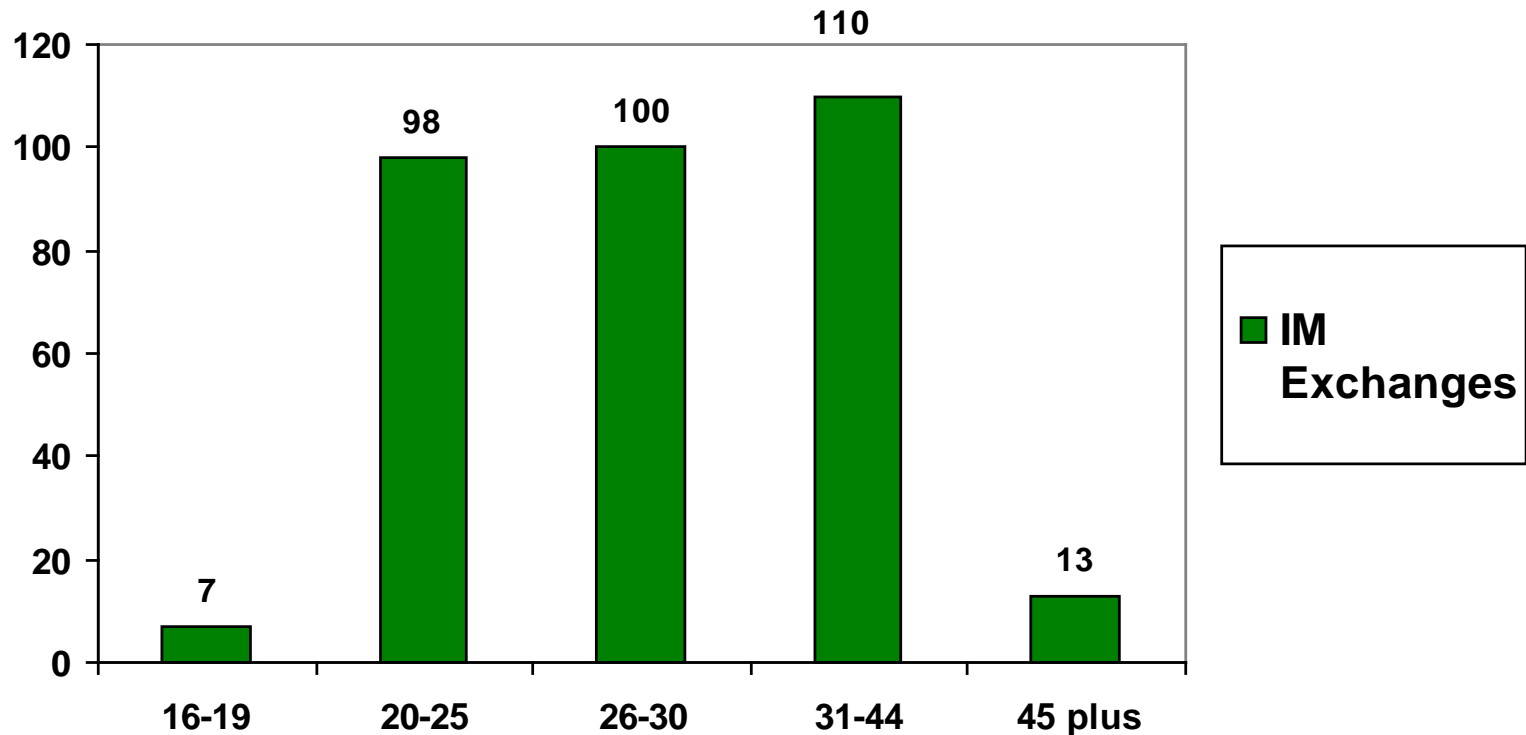
How to Make NEPs User Friendly?



Who uses steroids?

- Predominately male – although some female body builders
- Age – Varies from 16-50+
- Most are amateur or recreational body builders
- Some competitive body builders
- Athletes – all sports – football, hockey, weightlifters, etc
- Professionals – where physical size and strength matter (i.e. police, corrections officers, bouncers)

Age - Steroid Exchange Contacts Halton - 2012



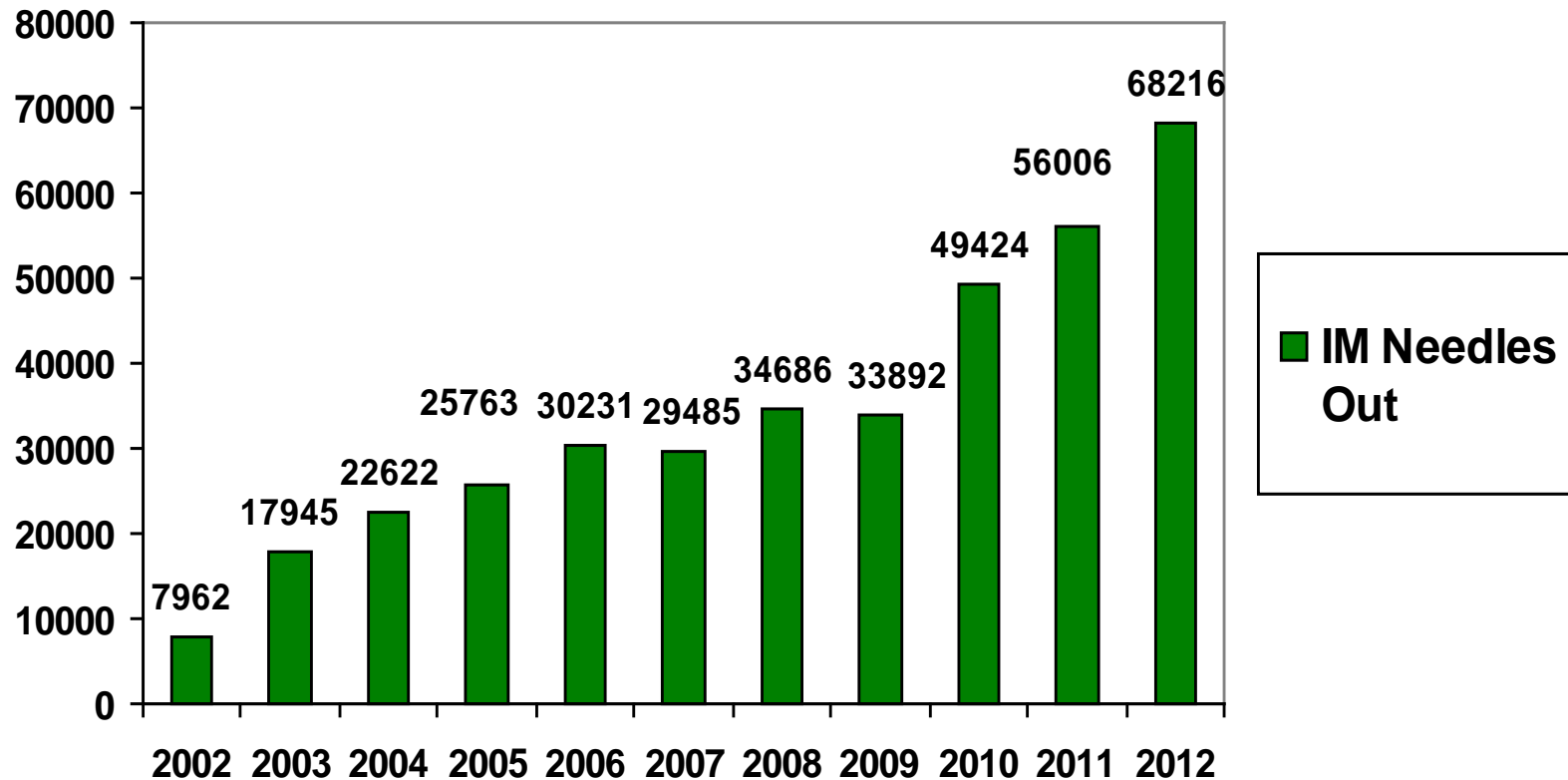
Concurrent Problems

- Body Image problems
- Body Dismorphic Disorders- generalized or specific
- Eating disorders – nutrition obsession
- Anxiety disorders – GAD, OCD
- History of physical, emotional, or sexual abuse
- History of bullying
- Steroid use post-injury – i.e. auto accident prescribed steroids
- Cross over with opiate abuse and IV drug use

The Halton Experience

- Providing NEP Services to Steroid Users, Since 2002
- Initially developed NEP to include the needs of people who inject steroids
- Targeted promotion to steroid users (steroid pamphlets, promoted program to gyms, body building community, supplement stores, etc)
- Adapted program on an ongoing basis as needs emerged

Growth of Distribution of IM Needles for Steroid Use 2002-2012



The Ottawa Experience

- We have been recording services to steroid users since 2007
- Started to notice an increased need for steroid specific resources and equipment
- 2010- we started a Performance Enhancing Drug Special Initiative
- 2010 - Ordered 5 different steroid resources from the UK

The Ottawa Experience

- Similarly to Halton Region we targeted promotion to steroid users (safer steroid use pamphlets, promoted program to gyms and supplement stores, as well as information booths at the 2 University and 1 Collage gym in Ottawa)
- In 2011 we developed our own safer steroid use pamphlet- we have since partnered with CATIE to take our resource National (it should be ready for distribution across Canada this spring)

The Ottawa Experience

Injecting Performance Enhancing Drugs

Year	# of Client Interactions
2007	14
2008	13
2009	44
2010	78
2011	128
2012	187

In 2012 we distributed 38,376 needles to people who inject PEDs

Making NEPs User Friendly for People Who Inject Steroids

- Stocking a range of IM needles/syringes
- Stocking a range of needle tips for draw up
- Ensuring sufficient quantities of IM needles
- Educating staff on IM injection
- Being open to teaching and providing IM injection instructions
- Enquiring about problems clients might be having with their injections or injection sites



Questions, Feed-back, Discussion ...

