SUMMIT ON APPEARANCE AND PERFORMANCE ENHANCING DRUGS (APEDS) AND YOUTH

Ottawa, April 22, 2015
Kids Under Pressure: Why Young People are Tempted by APEDs

Mr. Sloden Lackovic
Staff Sergeant, Waterloo Regional Police Services
- It is estimated that 50% of APEDs users are athletes, and the other 50% are not (Taylor Hooton Foundation)

- As many as **80% of current users never played sports** in high school (Cohen et. al, 2007)

- 5.9 percent of boys reported using steroids, while the rate among **girls was 4.6 percent** (University of Minnesota, 2012)
Kids Under Pressure

- Coach pressures: to get bigger, stronger, leaner - often not just star athletes

- Parental pressures: to grow up and be a certain way

- Peer pressures: to fit in with your peers, especially in appearance

- Societal pressures: the media
THINK THEY HAVEN’T BEEN DRAWN IN?

“You’ll be prettier if you use our product.”

“This product will make you healthier.”

“You can get thinner – “ripped”, bigger, stronger, or faster if you choose this product.”

“You can gain a competitive advantage.”

THROUGH MAGAZINE ADVERTISEMENTS AND TV COMMERCIALS, MARKETING OF THESE PRODUCTS SPEAK TO OUR INSECURITIES
THE SIMPLE MESSAGE

IT’S JUST NOT WORTH IT
**How Can We Help?**

- Help them find balance
  - With school, sports and socialization
  - In accepting and understanding who they are

- Help them source reliable information

- Help them learn about proper nutrition, physical activity, sleep/rest, recovery, training
CCES Survey on Appearance and Performance Enhancing Drugs (APEDs) and Youth: A Summary of Results

Mr. Paul Melia
President and CEO
Canadian Centre for Ethics in Sport
NATIONAL SURVEY ON YOUTH & PERFORMANCE ENHANCING DRUGS

- 2,997 Canadians, aged 10 – 18
- March-April, 2014
- Comparison data: August 1993 report from the Canadian Centre for Drug-Free Sport
THE GOOD NEWS:

- The vast majority of Canadian youth DO NOT use APEDs
  - 82% at low risk
- Three-quarters are confident they don’t know anyone who does
- 91% say it’s not OK to try steroids, even once
- 88% agree that using drugs in sports is cheating
USER PROFILE COMPARISON (2014 & 1993)

More likely to:

- be Male
- be physically active, play sports & lift weights
- have heard about APEDs socially
- be focused on personal appearance and popularity
- **Today:** also very active & popular on social media
THE BAD NEWS:

- 18% of Canadian youth “at risk” of using APEDs
- Most Canadian youth largely unaware of nature and duration of side effects:
  - 70% don’t know if ephedrine has side effects
  - 50% don’t know if anabolic steroids have side effects
WHY?
THE CONTEXT HAS CHANGED

- Confusion: change in number & nature of APEDs available today
  - 1993: focus on anabolic steroids
  - Now: steroids + ephedrine, creatine, beta blockers, EPO, HGH, etc.

- 21 - 27% have used vitamin, mineral or protein supplements, energy drinks in last 12 months

- Fewer than 2 in 5 have learned about the risks of APEDs in classroom context
KEY TRIGGERS FOR AT-RISK YOUTH:

- Peer pressure: encouragement of friends legitimizes activity
- Short-term mindset: only trying a drug “once”
- Both triggers decrease the perceived risk of using APEDs, and so encourage the behaviour
- 45% of users say athletes taking drugs like steroids should be allowed to compete on high school team
- 51% of users say steroids will help them look better
Beyond the Survey

CBSA 2\textsuperscript{nd} Most Confiscated
CBSA 1\textsuperscript{st} in Quebec
Drugs are being used by our young people not only as a way of gaining an edge in athletic competition but also as a means of improving their physique and image.

—THE HON. CHARLES L. DUBIN
THE PSYCHOSOCIAL ASPECTS OF APEDs USE: WHY “JUST SAY NO” DOESN’T WORK

Dr. Stephen Feder
Director, Adolescent Health Clinic
Children Hospital East Ontario
APES in Adolescents
Medical Issues and Complications

Stephen H. Feder MDCM, MPH, CCFP
April 22, 2015
Classes of Appearance and Performance Enhancing Substances

- **Anabolic agents:**
  - *steroids and their precursors*
- **Nutritional supplements:**
  - *Creatine; protein/amino acids; B-hydroxy B-methylbutryic acid*
- **Stimulants** – ephedrine, caffeine
- **Other**
  - Human Growth hormone (limited effect on athletic performance, increases lean mass and reduces fat)
  - Erythropoetin, B-blockers, analgesics, diuretics
  - Blood doping
  - Gene doping
Are APES a good thing?

Do they work?
Anabolic steroids

Affect every part of the body
Cardiac effects

- Anecdotal reports of: cardiomyopathy, arrhythmias, infarction, stroke, coagulation abnormalities
- Studies reveal:
  - Increased heart mass
  - Increased collagen content – “scar” due to androgen induced injury
  - Diastolic dysfunction
  - Reduced ejection fraction
  - Increase in LDL cholesterol
Neuroendocrine

- Hypothalamic-pituitary axis is shut down in chronic androgen use
  - Produces temporary or at times permanent hypogonadism
    - Associated with: decreased libido, sexual dysfunction, infertility, depression
- Stunted height, baldness, gynecomastia
- Glucose intolerance
- Interaction with IGF-1 may predispose to testicular cancer (Chimento et al 2011)
Other organs

- **Kidney**
  - *Rhabdomyolysis – large muscle mass / heavy resistance training*
  - *Focal glomerulonephritis in long time users*

- **Neuronal damage**
  - *In vitro neuronal apoptosis warns at possibility for dementia and other neurodegenerative diseases*

- **Liver**
  - *Hepatotoxicity, jaundice, cancer, cystic lesions*
Psychiatric effects

- Hypomania, aggression, violence
  - Likely effect neurotransmitters that modulate behaviour (animal studies)

- Positive association with violent crime
  - Aggression $\rightarrow$ crime
  - Androgens used to prepare for crime – eg. Anders Breivik (mass killing in Norway)
Associated risks

- Shared needles
  - HIV, Hepatitis B&C
  - endocarditis
Supplements

• Creatine
  – *non-essential amino acid found in fish, meat, eggs*
  – 30% nonresponders
  – *Not recommended for <18 by American College of Sport Medicine re: gateway potential*

• Increases performance in brief, high intensity exercises (weight lifting); increases fat free mass

• Adverse effects: weight gain, water retention, GI cramping, fatigue, diarrhea
Energy drinks

• > $5 billion revenue annually
• Increasing consumption – 35% regular users (market research, 2008)
• Reasons for use: low sleep and/or energy, wanting to mix with alcohol
• Contain guarana, taurine, ginseng, sugars, vitamins and rarely list caffeine
• Contain the equivalent of 2-3 cups of coffee
  – Effect enhanced by other ingredients
Side effects

• Caffeine associated with
  – headaches, irritability, anxiety, confusion, arrhythmias, dehydration
  – Potential effects on pregnancy – low birthweight and prematurity
  – Dependency
    • Withdrawal (after 1-2 cups of coffee or 5 sodas daily X 2 weeks)
    • Tolerance
    • Difficulty quitting despite negative effects
Mixing with alcohol – severe synergistic effects

• Combined drinks contain large amounts of alcohol, the effects of which may be masked by the caffeine (O’Brien et al 2008)
  – Greater likelihood of:
    • being taken advantage of sexually
    • Sexually assaulting someone
    • Driving with impaired driver
    • Being hurt or injured
    • Requiring medical treatment

• A wide awake drunk!
Epidemiology

• Most androgen users are not competitive athletes
  – *Vanity doping / image-enhancing drugs*

• 7.7 (rural BC) & 5.8 (US) fold increased use in sexual minority boys
  – *Correlated with polysubstance use, depression, victimization*
  – *Body image dissatisfaction*

• Most information derived from media
High risk youth

- Accomplished teens who need to “break through” in their sport
  - Perhaps aiming for sport scholarship or professional career
- Intense focus on a single sport
- Perceived short cut to achieve objectives
- Preoccupation with physique
  - Use of male/body magazines
  - Victims of bullying
- Perceived use as normative / who feel educated
- Pressure from parents and/or coach
Society’s Messaging

• The male body ideal has become leaner and more muscular
  – *Physiques that are unattainable without APES*

• When internalized, the difficult-to-achieve male body ideal will affect males’ self esteem and worth (Grieve 2007)
  – *Increases vulnerability to health-threatening behaviours*
Male body dissatisfaction

• Has emotional consequences
  – Correlates with depression, concern with shape and weight, negative affect

• Behavioural consequences
  – Body checking, use of APES
Functional Significance
A Vicious cycle

- The false belief that a particular behaviour will satisfy unmet developmental needs

- When these needs are not fulfilled, rather than choose a new strategy, out of desperation, the erroneous behaviour is escalated
The Power of Anorexia Nervosa

Sadness
Shame
Guilt
Fear
Emptiness

Powerless → Powerful

FAT

Weight control
Problem or Solution?

- Physical
- Psychological
- Social
- Personal
“Pure user”

- The prevalence of APES use in a healthy controlled manner is the exception

- Supports the concept of APES being used to accomplished some otherwise unmet needs
Polypharmacy

- Other APES
  - *HGH, Insulin*
  - *Caffeine, ephedrine, thyroid hormones*
- Nutra-ceuticals
- Street drugs
  - *Counterfeit, cut with a variety of substances*
- Non PE illicit drugs
  - *Cocaine, opioids, alcohol, mj, etc*
Androgen dependence

- Observed in 30% of users
- Kanayama (Harvard) suggest a formal DSM diagnosis of androgen dependency
- Hildebrandt proposes: “APED disorder” to highlight the complex dynamic and includes:
  - A: recurrent polydrug use (3/8 criteria) and
  - B: body image disturbance (3/6 criteria) or
  - C: pathological eating and exercise (2/6 criteria)
Pathways to dependence

- Obsession with the anabolic effects and fear of muscle loss upon stopping or modulating
- Androgen withdrawal:
  - causing dysphoria, headaches, restlessness, joint and muscle pain, suicide
- Hedonic effects (animal studies)
  - Overlap of androgen and opioid pathways
  - Androgen craving blocked by naltrexone (Peters 2005)
Reducing the impact

• Education
  – Does it work?
  – Comprehensive approach

• Societal intervention
  – Helping young people feel good about themselves

• Harm Reduction
  – Needle exchange
  – Laboratory monitoring
    • Beware of false reassurance
The CCES Succeed Clean Program: An Overview

Ms. Jennifer Keith
Program Manager for Succeed Clean
Why Succeed Clean?

2010 – 8 anti-doping violations at UW + trafficking charges

CCES convened Task Force on the use of PED in football

“The primary goal of anti-doping education should be prevention.”

OTF Grant = Succeed Clean Initiative (2012-2014)
Succeed Clean – Pilot Objectives

• Peer Mentor Program
  – Reach middle/high school students directly

• Community Engagement
  – Develop tools and resources for key influencers
  – Establish norms for key influencers
  – Increase knowledge of key influencers

• Research
  – current attitudes, trends & knowledge
  – program evaluation
Who is Succeed Clean?

- Community Partners
- CCES
- Community Assets
- Local Police Services
- Local School Boards
- Local Sport Organization
- Local Universities

SUCCEED CLEAN
ACHIEVE YOUR POTENTIAL DRUG FREE
Peer-Mentor Program

- Student-Athletes (U. of Waterloo, Wilfrid Laurier & Kitchener Rangers)
- School Boards & School Resource Officers
- Succeed Clean Presentation
  - Role Models
  - Pressure and Realities
  - Cheating Path vs Clean Path
  - Reliable Information (steroids, supplements, stimulants, nutrition
  - Interactive & Personal – video, stories, personal experiences
- Research – Social Innovation Research Group

Peer-Mentor Program Reach

- Year 1 – 14 presentations; +1,300 students
- Year 2 – 14 presentations; +/- 1,400 students & 150 community sport athletes
Peer-Mentor Program Impact

2 Years – 25 presentations, +/- 3,000 students

Year 1 – 701 pre-surveys ~ 615 post-surveys

1 in 3 students are taking supplements; 37% taking 2 or more

1 in 4 report knowing someone who is using steroids

Students who indicated a willingness to use an APED were more likely to be taking a nutritional supplement.
Peer-Mentor Program Impact

Effective Messaging:

- Knowledge about steroid side effects
- Understanding of the potential risks of supplements
- Knowledge about side effects of steroids
- Willingness to take an APED
- Knowledge about healthy ways to improve performance / health

32% did not know about the risks of taking supplements or believed there are few risks (pre-survey)

Post-survey 100% saw supplements as riskier

32%
Succeed Clean Community Engagement

Forum discussions aimed to:

• Increase knowledge & understanding

• Encourage meaningful conversations

• Harness community assets

Key Influencers:
Parents
Coaches
Educators
Stakeholders

6 Community Conversations
+/- 300 key influencers
Succeed Clean Benefits

Reduce the use and illegal distribution of PED.

Educate citizens, especially youth, about risks of APEDs

Relay reliable information to citizens, especially youth

Leverage key community assets and stakeholders

Rally the community

Overarching Community Benefits

SUCCEEDCLEAN
ACHIEVE YOUR POTENTIAL DRUG FREE
Succeed Clean Benefits ~ Police Services

Teach prevention, alternate pathways & decision-making skills in safe and ethical environment

Peer-mentors connect with youth without intimidation and can relate on current issues and pressures

Help rally community around important and growing issue

SROs help control the message ensuring accurate and reliable information transfer

Help solidify long-standing relationship with school boards and schools

Open door for SROs to have direct conversations with local youth about APEDs

Contribute to a safer and healthier community
Succeed Clean Benefits ~ Universities

Better informed student-athletes

Reduce risks of adverse analytical findings

Visible leadership in anti-doping fight

Community Outreach
  - visibility in community
  - increased community support
  - role models to next generation

Skill development for student-athletes
Succeed Clean Benefits ~ School Boards

- Youth speaking to youth!
  - relatable
  - motivational
  - no intimidation
- Tools and examples to stimulate the conversation
- Educate key influencers
- Support reduction of use and trafficking of PEDS
- Motivate students to become university athletes, peer-mentors and to succeed clean
- Support character education – making ethical and healthy choices
- Contribute to a safer and healthier school & community
What’s Next?

- $478,700 grant
- 2 years
- 12 new communities in Ontario
- PSO engagement
- Up to 20,000 students
- Longitudinal research
- Social media
What’s Next?
The Power of Peer Mentors in APEDs Education

Mr. Spencer Thompson
Succeed Clean Peer-Mentor
Role of the Succeed Clean Peer-Mentor

- Engage students in the conversation
- Provide reliable information about APEDS
- Share relatable information about pressure, media, etc.
- Share stories and personal experiences
- Promote the Clean Path
- Serve as role models for the next generation of athletes
Why Peer-Mentors?

- Relatable
- Attainable
- Approachable
- Knowledgeable
When asked what they liked the most about the presentation:

**Learning new information** (230 comments)
- “They were very informative and got their point across.”
- “Getting information about good choices and bad choices.”

**The Presenters** (128 comments)
- “They were confident in themselves. I really liked it.”
- “Even though it was a serious topic, they were funny.”
- “Athletes made it real, down to earth, and fun.”
- “It was easy to relate to young athletes.”
- “How real student athletes talked to us honestly.”

**Hearing Personal Stories and Perspectives** (89 comments)
- “The stories about the people and how steroids affect your life.”

**The Video** (76 comments)
- “The example of Eric to help us better understand.”
- “The video because it was nice to hear what an APEDS user has to say about those drugs.”

**Engaging Aspects of the Presentation** (23 comments)
- “It was chill. You could relate to it.”
- “It was fun to listen to. They had my attention.”
- “It was very inspirational and kept the audience engaged.”
Impact of Succeed Clean Peer-Mentors

THE CHOICE
THE CLEAN PATH

INCLUDE EVERYONE
GO FOR IT!
RESPECT OTHERS
GIVE BACK
PLAY FAIR
STAY HEALTHY
KEEP IT FUN
Impact of Succeed Clean Peer-Mentors

**Steroids are:**

Anabolic steroids are synthetic versions of naturally occurring hormones in your body like the **male hormone testosterone** whose job is to build complex molecules such as muscle.

Anabolic hormones are already present in everyone’s body; steroids increase the concentration present, emphasizing their effects.

These products should be prescribed by a doctor for medical use.
Engaging the Audience
Audience Reaction

WHERE DOES IT COME FROM?
“There is no question about it. Underground steroid products make up the dominant share of the global steroid business now.”  

steroidology.com

“21% of anabolic steroid products from underground labs were contaminated with toxic heavy metals.”


“64% of the UGL [Underground Lab] steroids did not meet label claims either underdosed or overdosed by greater than 20%.”

BUYER BEWARE!

FDA is very concerned with products containing synthetic steroid ingredients that are marketed as dietary supplements. There is no requirement for the manufacturer of a dietary supplement to provide FDA with evidence of the product's effectiveness, and the manufacturer also need not provide FDA with evidence of product safety prior to marketing.

Food and Drug Administration, USA
www.fda.org
Take-Home Message

What do you think you’ll remember about the presentation?

1. Avoid APEDS, “Don’t Do Drugs” Message (128 responses)
2. Side Effects, Risks and Dangers (121 responses)
3. The Stories (65 responses)
4. Facts and information about APEDS (41 responses)
5. Making Choices (36 responses)
6. Everything/The Presentation (30 responses)
7. To Succeed Clean (27 responses)
8. Information about Supplements (23 responses)