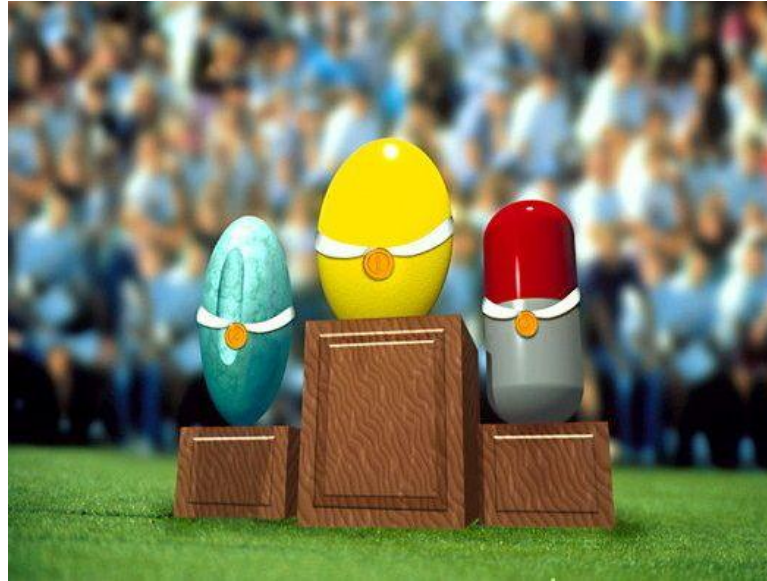


# Institute of Sport, Physical Activity and Leisure (ISPAL)



## Doping prevention for young athletes: What initiatives can lead to success?

Prof Susan Backhouse

Pro Safe Sport for Young Athletes, 1-2 Sept 2014, Berlin



**PREVENTING DOPING IN SPORT**



Doping in sport is an emerging area of research strength within the Carnegie Faculty. This area has emerged from a worldwide recognition that sound research is central to the continued development of effective anti-doping policy and practice. A collection of experienced and new researchers in the Carnegie Faculty have committed to this research field whilst both national and international level collaborations are already established. Currently, numerous research initiatives are underway, spanning the social sciences.

This research focus originated from a World Anti-Doping Agency (WADA) commissioned review of literature published in 2007 (Backhouse, McKenna, Atkin and Robinson, 2007). As the first report of its kind in this area, the review highlighted a profound lack of evidence on the social science of doping in sport. It also emphasised the importance of generating a sound evidence base from which to develop anti-doping education programmes. Dr Susan Backhouse now leads a committed team of researchers within Carnegie, whilst also collaborating with colleagues externally. More specifically, she has established positive collaborations with researchers in the UK, Australia and the US. Who together are pursuing research that meets the three qualities that will change practice: it must be useful, usable and used.

Funded by the World Anti-Doping Agency (WADA), a current study is examining the influence of health consequence information on the likelihood of adolescent athletes using steroids. The data collection phase of this international research project (involving colleagues in the UK, US and Australia) is underway. Once completed, the study findings will be widely disseminated by WADA, and the researchers' individual networks. Similarly, Susan is currently collaborating with researchers in the UK and Hungary on another WADA-funded project examining the markers of seeking performance enhancement in emerging young athletes. Recently, she finalised a research study examining the knowledge, attitudes and beliefs of athletes supported personnel in Australia on the issue of anti-doping. These findings have been reported to the Australian Government. Again, the resulting outputs will help to inform global anti-doping policy.

In the last two years, the Carnegie Faculty's capacity to pursue this line of enquiry has increased and its reputation and expertise in this field strengthened. Lisa Whitaker and

Laurie Patterson joined the team after securing two full-time Carnegie PhD bursaries. The bursaries have allowed them to undertake doctoral research in the field of doping in sport. Lisa is currently examining the risk factors for legal and illegal performance enhancement in sport and the need to understand athletes' willingness to dope is one of the unique factors of this study. The results of this study will provide national governing bodies, UK Anti-Doping and WADA with a robust evidence-base on which to develop their education policy for athletes. This is important if education is going to be effective in preventing future doping. Laurie focuses her research attention on the coaching network as there is a dearth of research published on this influential population. Thus, in her first study, Laurie will be examining an existing online anti-doping education tool for coaches, developed by WADA. This represents an important and unique contribution to the body of research, rethinking that there are many anti-doping education tools, few have been evaluated.

In summary, doping scandals continue to feature in the media and this issue will remain a plague of sport. Given that the current detection-based deterrence approaches (based on testing and sanctions) are not (cost) effective, prevention education represents the most potent way to doping-free sport. While it will take many years to build a strong evidence base relating to all aspects of anti-doping education and the respective target populations that it should reach, the research team in the Carnegie Faculty are committed to pursuing this line of investigation and providing policy direction and support. Put simply, and aligned with the Olympic ideal, we are committed to strengthening the research evidence base, and in that pursuit we will go faster and aim higher.

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**SAY NO!  
TO DOPING**

 WORLD ANTI-DOPING AGENCY



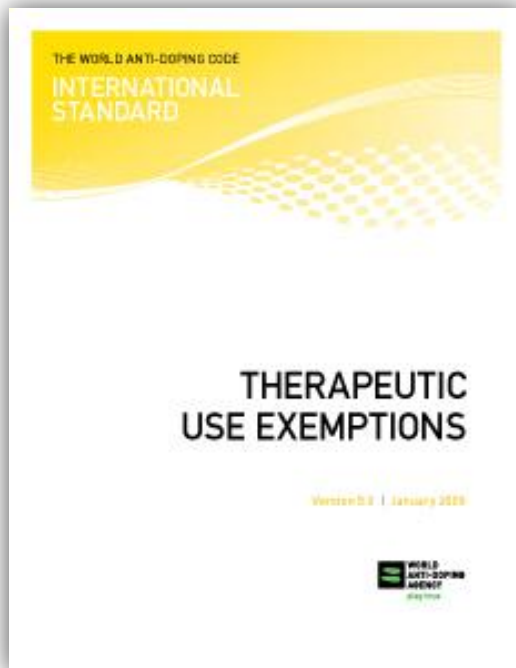
The World Anti-Doping Code

## THE 2010 PROHIBITED LIST INTERNATIONAL STANDARD

The official text of the Prohibited List shall be maintained by WADA and shall be published in English and French. In the event of any conflict between the English and French versions, the English version shall prevail.

This List shall come into effect on 1 January 2010

The Prohibited List 2010  
19 September 2009



# 2015 Code

- Information programs should focus on providing basic, updated and accurate information:
  - Substances and methods on the Prohibited List
  - Anti-doping rule violations
  - Consequences of doping, including sanctions, health and social consequences
  - Doping Control procedures
  - Athletes' and Athlete Support Personnel's rights and responsibilities
  - Therapeutic Use Exemptions
  - Managing the risks of nutritional supplements
  - Harm of doping to the spirit of sport
  - Applicable whereabouts requirements

(WADC, 2015, p.96)



# Information / Education

*“While the provision of information is generally a one-way process...delivered in a standard format, education is generally two-way or collective process, involving teaching and learning, is usually designed for the particular audience, and is seen as a long term or continuous process and relationship with [the] learner”*

Houlihan (2008, p.63)

Focusing intervention efforts on information giving poses two major problems in the context of doping in sport.....

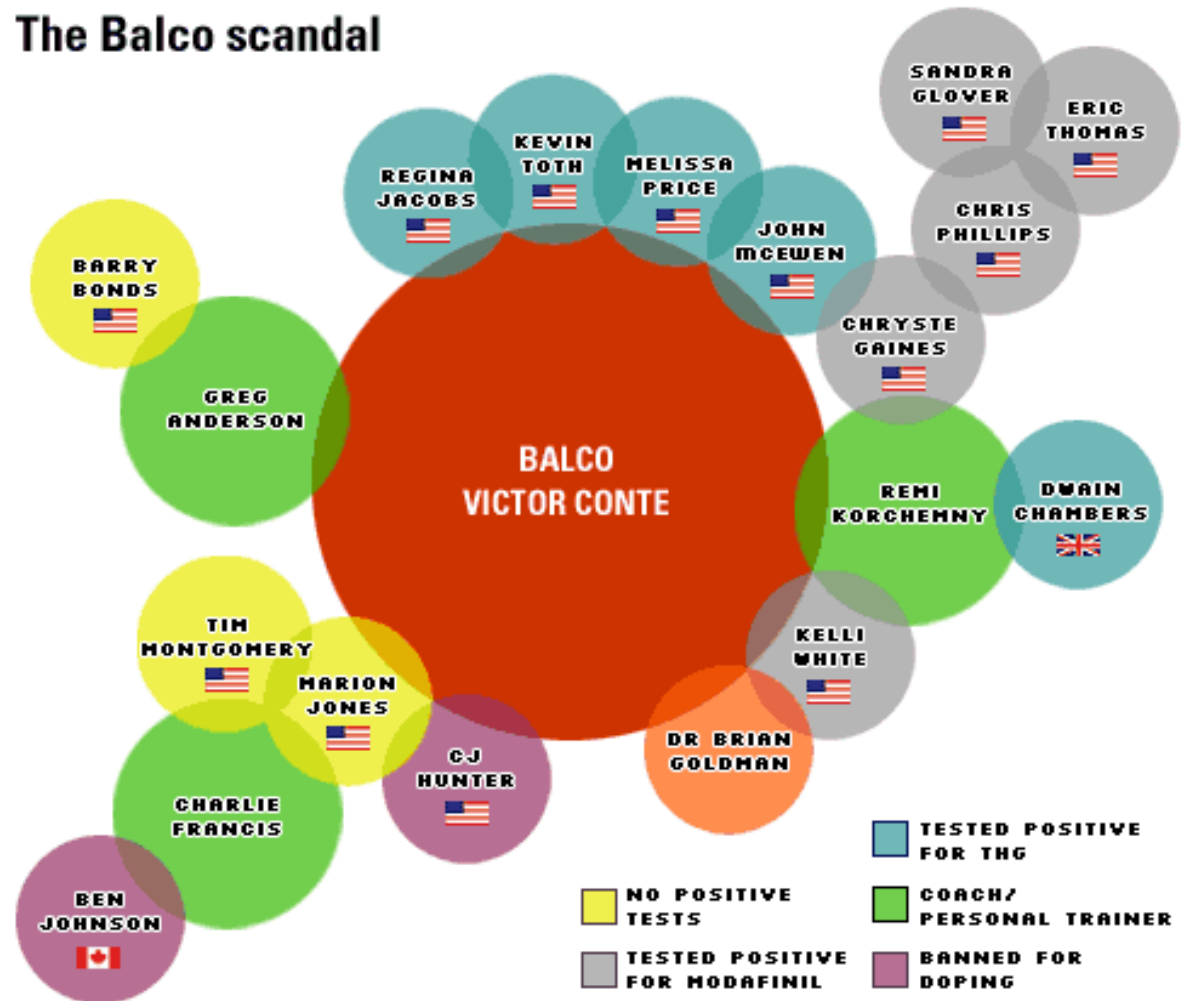
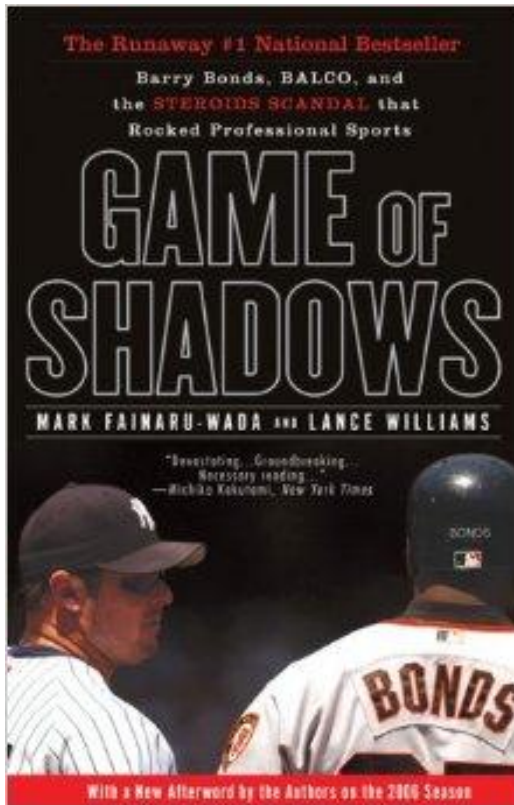
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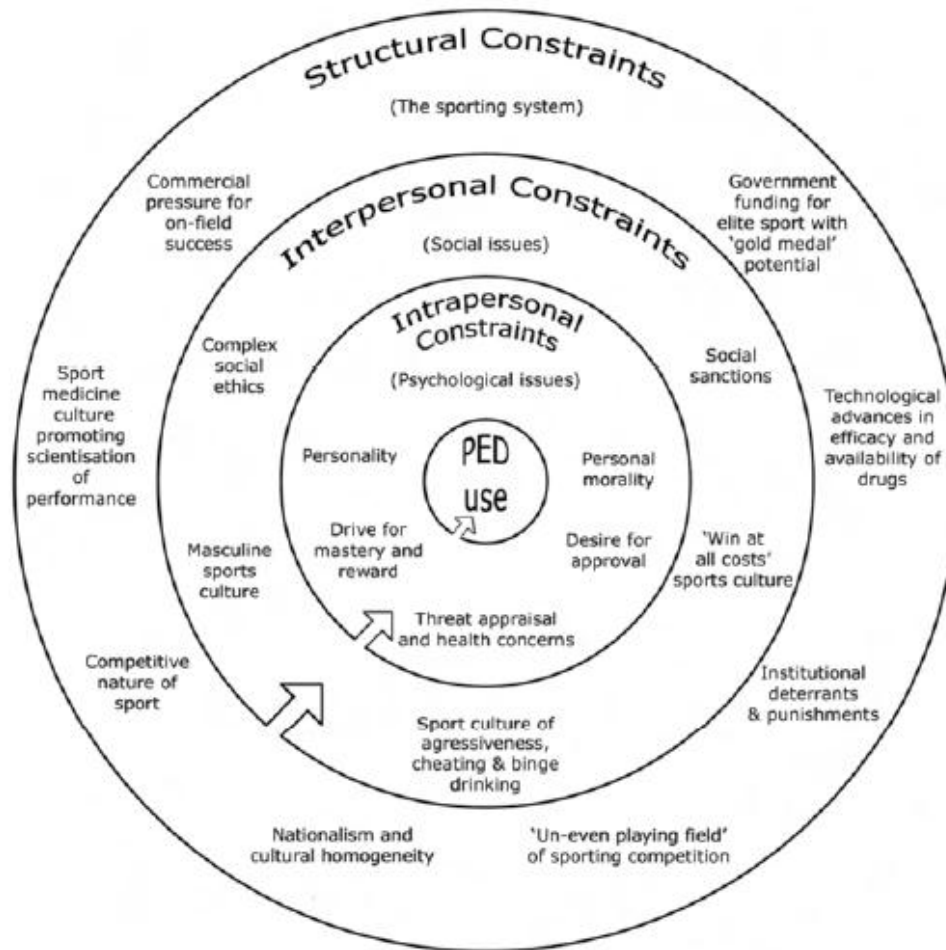


# 2

## The Balco scandal



# Contextual model of doping in sport



# Role of others

- An admitted doper described his coach as an important factor in why he had remained drug free for so long, saying that ‘he was anti-drugs completely’ and ‘I was very much with him on that’ (p. 216)
- When the individual moved into a new training group with a new coach he began to dope almost immediately, commenting that ‘literally within a couple of days was taking stuff’ (p. 216).

# Doping as situated & dynamic

Doping athletes appeared:

- a) to experience changes in their sporting results;
- b) to experience some form of significant life-disturbances; while
- c) living in relative isolation of a micro-world in which training and performance became an almost exclusive focus of their lives.

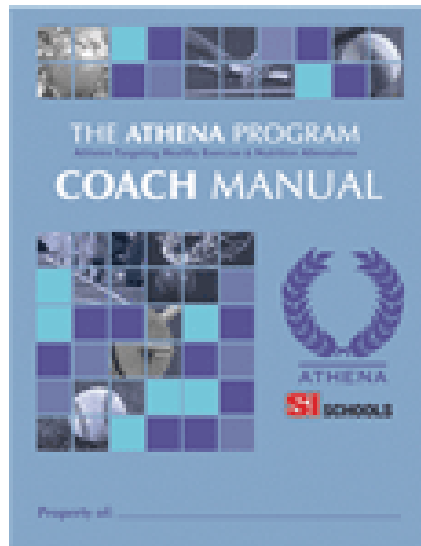
Moving beyond.....



# 2015 Code

- Prevention programs “*should be values based and directed towards Athletes and Athlete Support Personnel with a particular focus on young people through implementation in school curricula*” (WADC, 2015, p.96)
- Notable shift in emphasis towards universal prevention.

# Anti-doping education

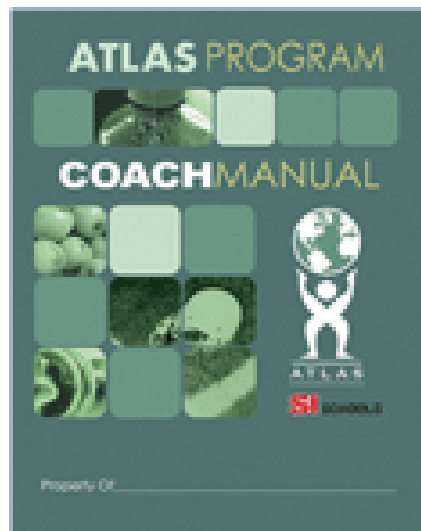


## A Mediation Analysis of the ATHENA Intervention for Female Athletes: Prevention of Athletic-Enhancing Substance Use and Unhealthy Weight Loss Behaviors

Krista W. Ranby,<sup>1</sup> MA, Leona S. Aiken,<sup>1</sup> PhD, David P. MacKinnon,<sup>1</sup> PhD, Diane L. Elliot,<sup>2</sup> MD, FACP, Esther L. Moe,<sup>2</sup> PhD, MPH, Wendy McGinnis,<sup>2</sup> and Linn Goldberg,<sup>2</sup> MD, FACS  
<sup>1</sup>Arizona State University and <sup>2</sup>Oregon Health & Science University

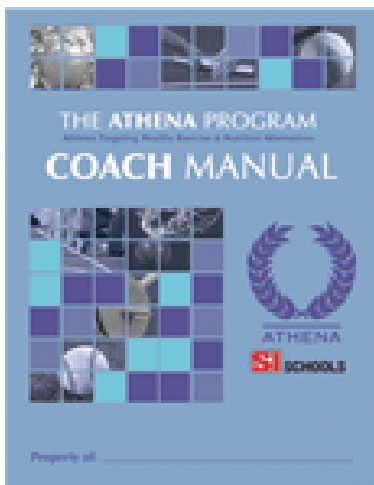
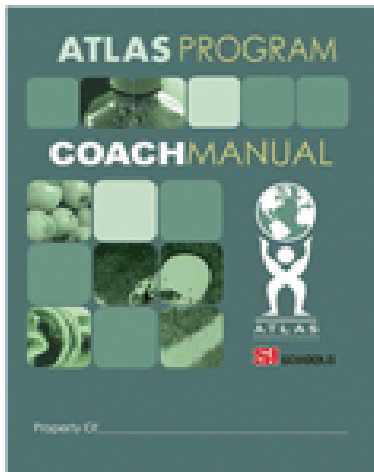
**Objective** To explain, through mediation analyses, the mechanisms by which ATHENA (Athletes Targeting Healthy Exercise and Nutrition Alternatives), a primary prevention and health promotion intervention designed to deter unhealthy body shaping behaviors among female high school athletes, produced immediate changes in intentions for unhealthy weight loss and steroid/creatine use, and to examine the link to long-term follow-up intentions and behaviors. **Methods** In a randomized trial of 1668 athletes, intervention participants completed coach-led peer-facilitated sessions during their sport season. Participants provided pre-test, immediate post-test, and 9-month follow-up assessments. **Results** ATHENA decreased intentions for steroid/creatine use and intentions for unhealthy weight loss behaviors at post-test. These effects were most strongly mediated by social norms and self-efficacy for healthy eating. Low post-test intentions were maintained 9 months later and predicted subsequent behavior. **Conclusions** ATHENA successfully modified mediators that in turn related to athletic-enhancing substance use and unhealthy weight loss practices. Mediation analyses aid in the understanding of health promotion interventions and inform program development.

**Key words** adolescents; educational interventions; health promotion and prevention; Longitudinal research; peers; mediation analysis.





# ATLAS & ATHENA



## WORD SEARCH PUZZLE SESSION 2: ACTIVITY 4 (6 MINUTES)

WORKBOOK  
PAGE 16

**INSTRUCTIONS TO SQUAD LEADER:**  
Read each clue and ask squad members to give answers. After all clues have been answered, have squad search for hidden words. When finished with this Activity, go on to Activity 5.



### SQUAD LEADER READS ALOUD

★ This is a word search game. It is on page 16 of your Workbook. First we need to answer the clues, then find the words in the puzzle. The words in the puzzle can be forward, backward, and diagonal.

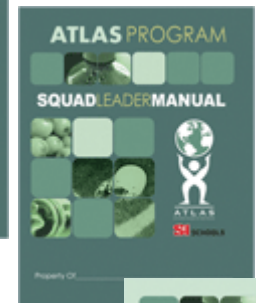
#### CLUES:

1. A skin problem caused by anabolic steroid use  
**(ACNE)**
2. Those who share needles or vials to take steroids by injection are at risk for this life threatening disease  
**(AIDS)**
3. Steroid users have a hard time controlling this emotion  
**(ANGER)**
4. Loss of hair caused by steroid use  
**(BALDING)**
5. These body parts can grow on males who use steroids  
**(BREASTS)**
6. Feeling of sadness caused by steroid use  
**(DEPRESSION)**
7. Medical term describing enlarged breasts in males caused by anabolic steroid use  
**(GYNECOMASTIA)**
8. The muscle that has increased disease from steroid use  
**(HEART)**
9. Yellow eyes can occur with anabolic steroid use because of disease in this organ  
**(LIVER)**
10. Steroid users have described their testicles shrinking to the size of this snack food  
**(PEANUTS)**

#### ANABOLIC STEROID EFFECTS



11. Uncontrolled anger outburst associated with steroid users  
**(RODRAGE)**
12. One of the main reasons that people take steroids, to increase this  
**(STRENGTH)**
13. Adolescent steroid users' bodies are tricked into thinking they are fully grown, resulting in this  
**(STUNTEDHEIGHT)**
14. Important male body parts which shrink as a result of steroid use  
**(TESTICLES)**





Sports Med  
DOI 10.1007/s40279-014-0240-4

SYSTEMATIC REVIEW

## Personal and Psychosocial Predictors of Doping Use in Physical Activity Settings: A Meta-Analysis

Nikos Ntoumanis · Johan Y. Y. Ng ·  
Vassilis Barkoukis · Susan Backhouse

Intervention studies, N = 4

Analysis demonstrated a very small, albeit significant, reduction in doping intentions and no changes in doping behaviour.



SOCIAL NORMS



Intentions

Behaviour

# Beyond the US

## **Evaluation of a health promotion programme to prevent the misuse of androgenic anabolic steroids among Swedish adolescents**

**SVERKER NILSSON<sup>1,2,3</sup>, PETER ALLEBECK<sup>2</sup>, BERTIL MARKLUND<sup>3,4</sup>, AMIR BAIGI<sup>3,4</sup> and BENGT FRIDLUND<sup>4,5</sup>**

*<sup>1</sup>Department of Primary Health Care, Varberg, Sweden, <sup>2</sup>Department of Social Medicine, Göteborg University, Göteborg, Sweden, <sup>3</sup>Research and Development Unit, Primary Health Care Halland, Falkenberg, Sweden, <sup>4</sup>Department of Primary Health Care, Göteborg University, Göteborg, Sweden and <sup>5</sup>Department of Nursing, Lund University, Lund, Sweden*

- 2 year appearance program, 451 adolescent males
- Youth leaders & health workers

# Nilsson et al (2004)

- Aim to promote negative attitudes to AS, increase self-confidence and raise awareness of each young person's strengths to shift confidence from being contingent on body image ideals
- In 16 year old age group – not 17 year old – AS injections significantly decreased from 5.3% pre-intervention to 1.2% post-intervention



**SOCIAL SCIENCE RESEARCH FUND:**

International Literature Review:  
Attitudes, Behaviours, Knowledge and  
Education – Drugs in Sport: Past, Present  
and Future

Prepared for  
**World Anti-Doping Agency**

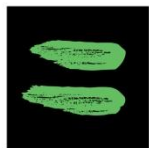
By the  
Carnegie Research Institute  
**leeds metropolitan university**



*The evidence base limits  
the capacity to target  
appropriate and  
efficacious education  
programmes to prevent  
doping in sport*

Backhouse, McKenna, Atkins & Robinson (2007)





# WORLD ANTI-DOPING AGENCY

## SOCIAL SCIENCE RESEARCH FUND:

Prevention through Education:  
A Review of Current International  
Social Science Literature

A focus on the prevention of bullying, tobacco, alcohol  
and social drug use in children, adolescents and young  
adults

Prepared for  
**World Anti-Doping Agency**

By the  
Carnegie Research Institute  
**leeds metropolitan university**

Review team:  
Dr Susan Backhouse, Prof. Jim McKenna, Ms. Laurie Patterson





# Six common ingredients

Target early  
when attitudes  
and values are  
being formed

Emphasise life  
skill development  
(adopting social  
influence  
approaches)

Tailor to fit the  
target population,  
with an emphasis  
on active  
participation

Monitor and  
deliver the  
programme with  
high degrees of  
fidelity

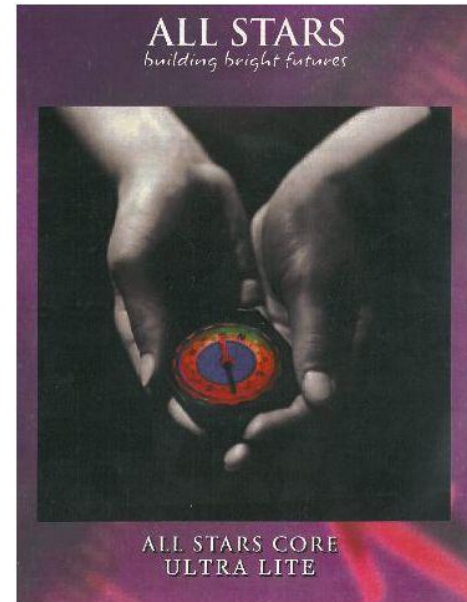
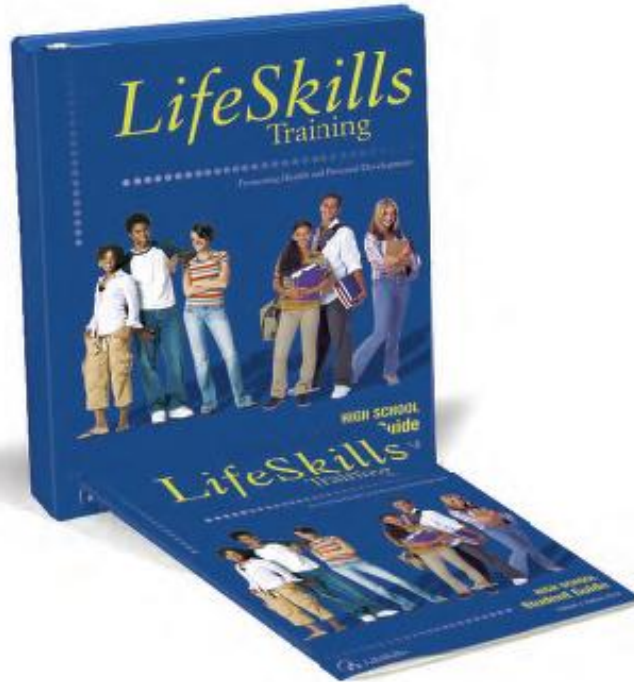
Ensure staff  
delivering the  
programme  
receive the  
necessary  
training

Incorporate  
booster sessions  
to reinforce the  
programme  
message



The challenge is to stay true to these  
evidence-based guidelines

# Evidence Based Programs (EBPs)

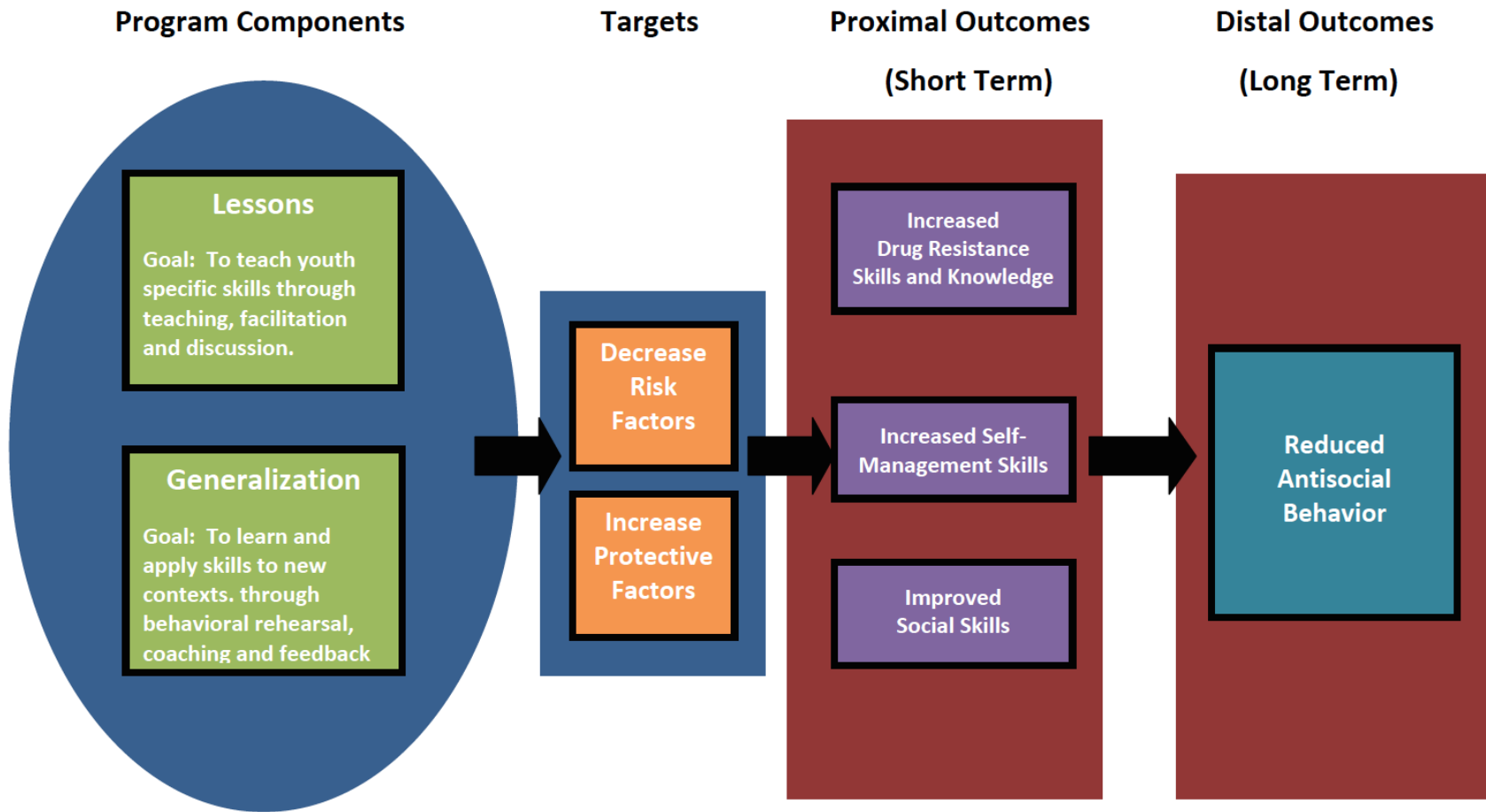


Strengthening Families Program

# Botvin's LifeSkills® Training (LST) Middle School

Program developed by Gilbert J. Botvin, Ph.D., Cornell University

*Logic Model created by the Evidence-based Prevention and Intervention Support Center (EPISCenter) at Penn State University in collaboration with Gilbert J. Botvin, Developer/National Health Promotions Associates.*



\*Program consists of Level 1: 15 sessions in Grade 6/7, Level 2: 10 sessions in Grade 7/8 and Level 3: 5 sessions in Grade 8/9 \*Sessions are 30-45 min in length. \*Lessons must be taught in sequence, frequency can vary from once per week to every day until program is complete. \*Program can be successfully implemented by teachers, school counselors, prevention specialists, police officers, and other providers. \*Optional violence prevention sessions are available for each level.

**Program Components & Goals**

LST Middle School consists of 30 class sessions designed to be taught over three years.

**Program Modalities**

Specific strategies, methods, and techniques are used to accomplish the program goals.

**Targeted Risk and Protective Factors**

Risk factors, which increase the likelihood of negative outcomes (e.g., drug use, delinquency, school dropout, teen pregnancy, and violent behavior) are targeted for a decrease. Protective factors, which exert a positive influence and buffer against negative outcomes, are targeted for an increase.

**Proximal Outcomes**

Targeted outcomes that the program is designed to impact *immediately following* program completion.

**Proximal Indicators of Distal Outcomes**

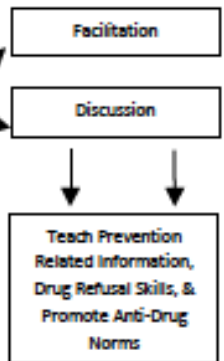
These outcomes are measured after the program. Changes are indicative of distal changes to be expected.

**Distal Outcomes**

Outcomes impacted by the program *months/years following* program completion that have been demonstrated through research.

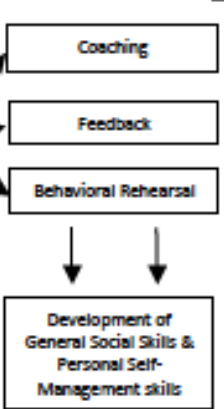
**Lessons**

Goal: To teach youth skills through teaching, facilitation and discussion.



**Generalization**

Goal: To learn and apply skills to new contexts through behavioral rehearsal, coaching and feedback



**Risk Factors:**

- Low Perceived Risks of Drug Use
- Early Initiation of Drug Use
- Sensation Seeking
- Rebelliousness
- Friends' Delinquent Behavior
- Friends' Use of Drugs
- Peer Rewards for Antisocial Behavior
- Favorable Attitudes toward Antisocial Behavior
- Favorable Attitudes toward Alcohol, Tobacco and Other Drug Use

**Protective Factors:**

- Social Skills
- Interaction with Prosocial Peers

**Increased Drug Resistance Skills and Knowledge:**

- Decreased favorable attitudes toward substance use
- Increased knowledge of effects of substance use
- Increased knowledge of media influences to use tobacco/alcohol/drugs
- Decreased belief in the normative nature of peer substance use

**Improved Self-Management Skills**

- Increased understanding of the importance of a positive self-image\*
- Increased knowledge of good decision making
- Increased task persistence
- Increased understanding of anxiety and its effects
- Increased relaxation skills

**Improved Social Skills:**

- Increased effective communication skills
- Increased assertiveness skills

**Reduced Intent to Use:**

- Tobacco
- Alcohol
- Marijuana
- Other drugs

**Reduced Antisocial Behavior:**

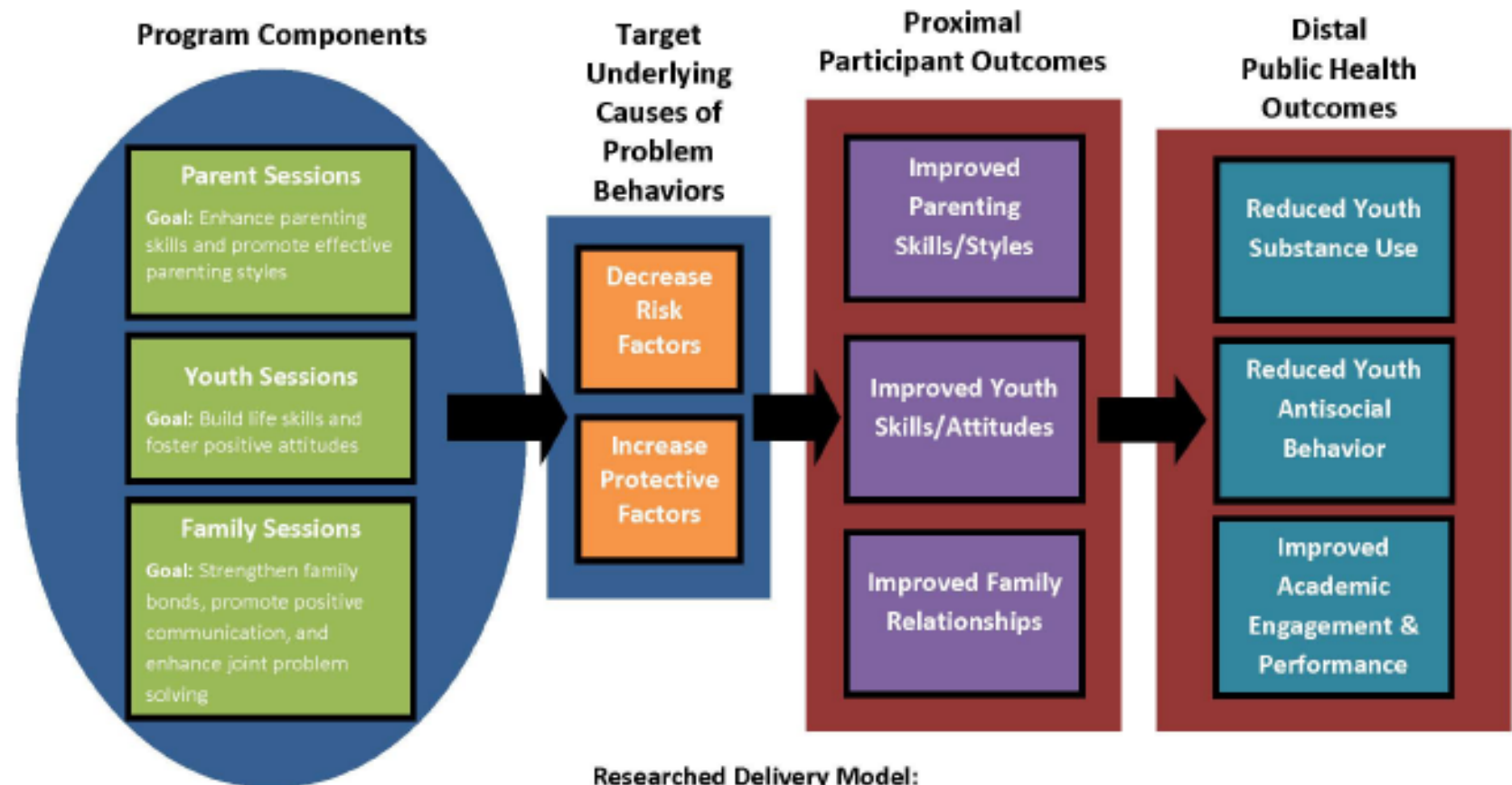
- Tobacco use
- Alcohol use
- Marijuana use
- Other drug use
- Violence
- Risky behavior

\*Botvin logic model refers to program increasing "self-esteem", survey items measure self-image.

## Strengthening Families Program: For Parents and Youth 10-14 (ISFP or SFP 10-14)

The original version of this program was developed through Project Family by the Social and Behavioral Research Center for Rural Health at Iowa State University.

Logic Model created by the Evidence-based Prevention and Intervention Support Center (EPISCenter) at the Pennsylvania State University

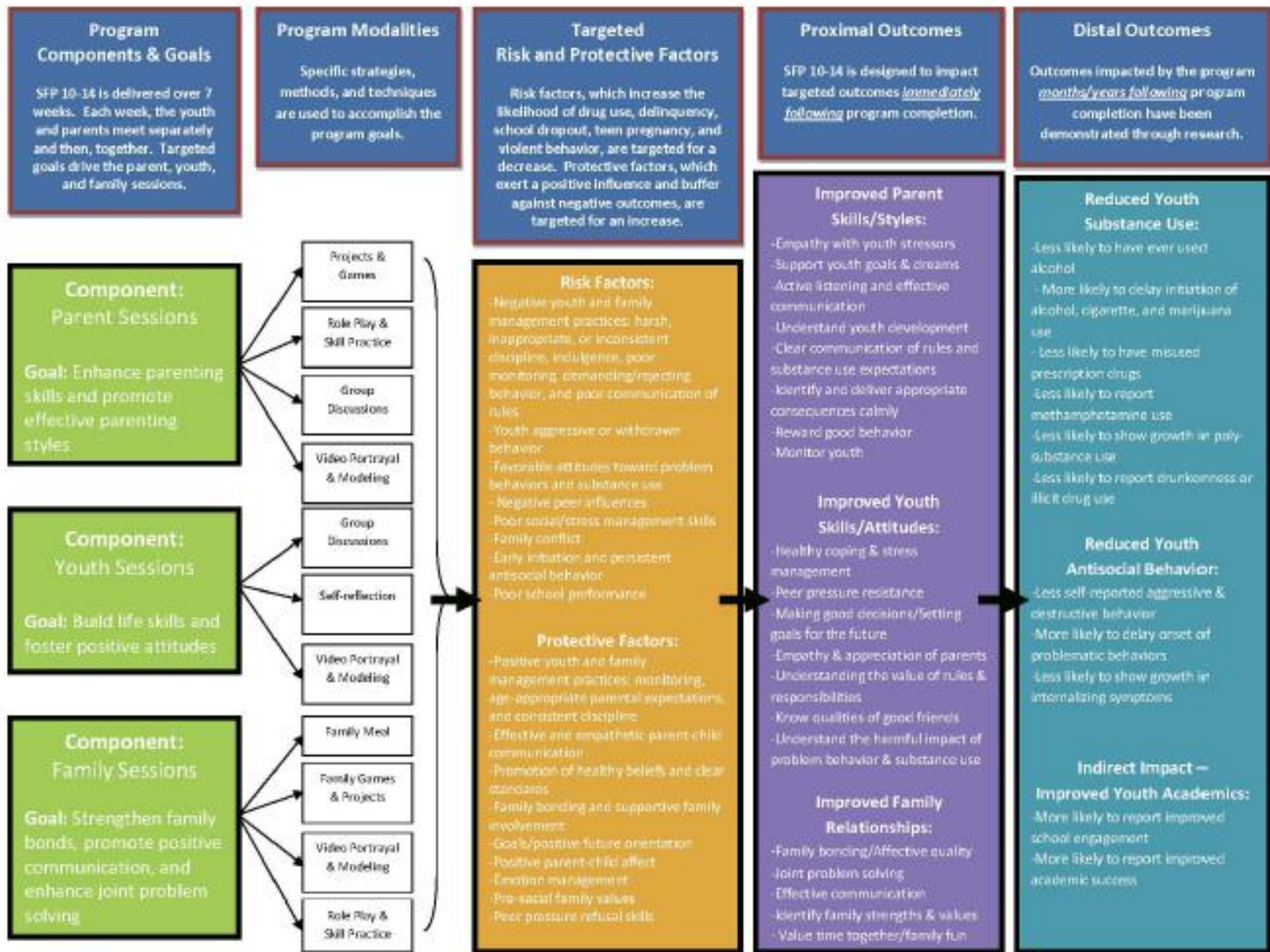


- targets youth ages 10 to 14 and their caregivers
- goal of serving 10 families per program
- delivered once weekly for 7 weeks
- a scripted curriculum with interactive video instruction
- led by three facilitators
- parent and youth sessions run concurrently followed by a joint family session for approximately two hours of instruction
- a family meal is recommended prior to program delivery to promote bonding and facilitator modeling

\$\$ It has been shown that for every dollar spent on implementation of SFP 10-14, there is a return of up to \$9.60 and a cost benefit of \$5,923 per youth. \$\$

*Iowa State University, Institute for Social & Behavioral Research - Spoth, R., Gyll, M., & Day, S. (2002)*







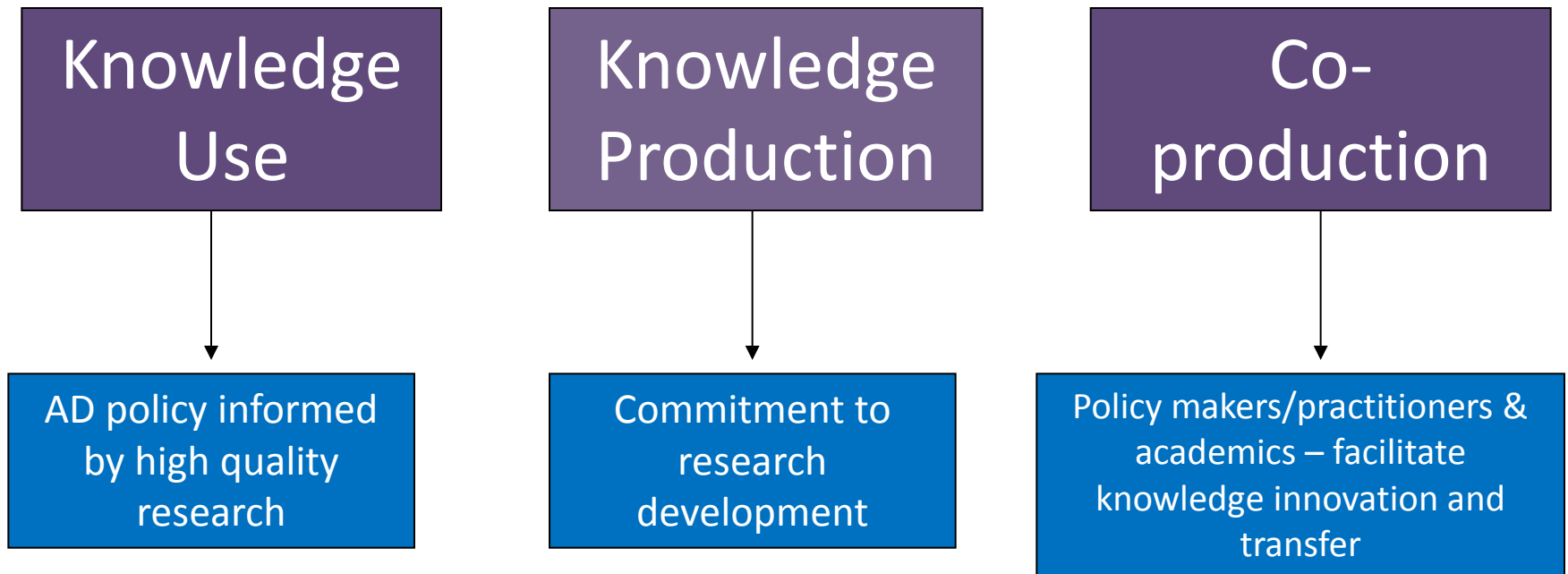
# Conclusion

- There is a dearth of high quality evaluations of doping prevention programmes
- However, single-sex, sport-centred, positive alternative programmes appear to have had some success in deterring adolescents from using anabolic steroids.

# Conclusion

- The field has to move from a compliance driven culture to a learning culture
- Thus, interventions need to consider the sporting context - alongside individual decision making processes - drawing on lessons learned from the wider prevention field.

# Future actions



# Thank you for listening

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