4.1. Decision and Suggestion by various organization/Federations/Association

4.2. Doping Control

4.3. Consciousness about rights and duties of participants

4.4. Doping Control process: General Overview of Doping control procedure
4.1. DECISIONS AND SUGGESTIONS BY VARIOUS ORGANIZATIONS/ FEDERATIONS/ASSOCIATIONS

The best part of being an athlete is rising to the challenge, doing best under the circumstances, and enjoying the process. It is the celebration of the human spirit, body, and mind. It is what we call "the Spirit of Sport," and is characterized by health, fair play, honesty, respect for self and others, courage, and dedication. Doping in sport is the complete antithesis of the Spirit of Sport. Doping destroys all that is good and noble about sport. Doping jeopardizes the health and well-being of athletes and erodes public confidence. In addition to risking serious health consequences, athletes who test positive for doping ruin their good name and reputation. This chapter mainly deals with to give athletes information on anti-dropping useful information on anti-doping.

National Anti-Doping Agency (NADA)

The National Anti-Doping Agency (NADA) is the national organization responsible for promoting, coordinating, and monitoring the doping control Play fair programme in sports in all its forms in the country. NADA works towards a vision of 'dope free' sport in India.

NADA’S Primary Functions

Adopting and implementing anti-doping rules and policies which conform with the World Anti- Doping Code, Cooperating with other sports related organizations and other anti-doping organizations, Encouraging reciprocal testing between National Anti-Doping
Organizations, and Promoting anti-doping research & education

Code

The World Anti-Doping Code (Code) is the document that harmonizes regulations regarding anti-doping in sport across all sports and all countries of the world. The Code provides a framework for anti-doping policies, rules, and regulations for sport organizations and public authorities so that there maybe a level playing field for all athletes worldwide.

Anti-Doping Rule Violations

Doping is defined by WADA as the occurrence of one or more of the following anti-doping rule violations mentioned in the WADA/NADA Code.

1) Presence of a prohibited substance or its metabolites or markers in an athlete's sample.
2) Use or attempted use by an athlete of a prohibited substance or a prohibited method.
3) Refusing to submit to sample collection after being notified.
4) Failure to provide whereabouts information or being unavailable for doping control.
5) Tampering with any part of the doping control process.
6) Possession of a prohibited substance or method.
7) Trafficking a prohibited substance or method.
8) Administering or attempting to administer a prohibited substance or method to an athlete.
For a second anti-doping rule violation the period of Ineligibility shall be within the range set forth in the table below.

**Table No.5**

**The period of ineligibility for a 2\textsuperscript{nd} anti-doping rule violation**

<table>
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<tr>
<th>Second Violation</th>
<th>RS</th>
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<th>NSF</th>
<th>St</th>
<th>AS</th>
<th>TRA</th>
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<td>4-6</td>
<td>8-10</td>
<td>10-life</td>
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<tr>
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<td>10-life</td>
<td>Life</td>
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<tr>
<td>NSF</td>
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<td>6-8</td>
<td>10-life</td>
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<td>6-8</td>
<td>8-life</td>
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<td>Life</td>
<td>life</td>
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</table>

Definitions for purposes of the second anti-doping rule violation table:

The anti-doping rule violation was or should be sanctioned by a reduced sanction under Article 10.4 because it involved a Specified Substance and the other conditions under Article 10.4 were met. FFMT (Filing Failures and/or Missed Tests): The anti-doping rule violation was or should be sanctioned under Article 10.3.3 (Filing Failures and/or Missed Tests). NSF (Reduced sanction for No Significant Fault or Negligence): The anti-doping rule violation was or should be sanctioned by a reduced sanction under Article 10.5.2 because No Significant Fault or Negligence under Article 10.5.2 was proved by the Athlete. St (Standard sanction under Articles 10.2 or 10.3.1): The anti-doping rule violation was or should be sanctioned by the standard sanction of two (2) years under Articles 10.2 or 10.3.1. AS (Aggravated sanction): The anti-doping rule violation was or should be sanctioned by an aggravated sanction under Article 10.6 because the Anti-Doping Organization established the conditions set forth under Article 10.6. TRA (Trafficking...
or Attempted Trafficking and administration or Attempted administration): The anti-doping rule violation was or should be sanctioned by a sanction under Article 10.3.2.

Application of Articles 10.5.3 and to Second Anti-Doping Rule Violation Where an Athlete or other Person who commits a second anti-doping rule violation establishes entitlement to suspension or reduction of a portion of the period of Ineligibility under Article 10.5.3 or Article 10.5.4, the hearing panel shall first determine the otherwise applicable period of Ineligibility within the range established in the table in Article 10.7.1, and then apply the appropriate suspension or reduction of the period of Ineligibility. The remaining period of Ineligibility, after applying any suspension or reduction under Articles 10.5.3 and 10.5.4, must be at least one-fourth of the otherwise applicable period of Ineligibility.

Third Anti-Doping Rule Violation A third anti-doping rule violation will always result in a lifetime period of Ineligibility, except if the third violation fulfills the condition for elimination or reduction of the period of Ineligibility under Article 10.4 or involves a violation of Article 2.4 (Filing Failures and/or and Missed Tests). In these particular cases, the period of Ineligibility shall be from eight (8) years to life ban.

Additional Rules for Certain Potential Multiple Violations For purposes of imposing sanctions under Article 10.7, an anti-doping rule violation will only be considered a second violation if the Anti-Doping Organization can establish that the Athlete or other Person committed the second anti-doping rule violation after the Athlete or other Person received notice pursuant to Article 7 (Results Management), or after the Anti-Doping Organization made reasonable efforts to give notice, of the
first anti-doping rule violation; if the Anti-Doping Organization cannot establish this, the violations shall be considered together as one single first violation, and the sanction imposed shall be based on the violation that carries the more severe sanction; however, the occurrence of multiple violations may be considered as a factor in determining aggravating circumstances (Article 10.6).

If, after the resolution of a first anti-doping rule violation, an Anti-Doping Organization discovers facts involving an anti-doping rule violation by the Athlete or other Person which occurred prior to notification regarding the first violation, then the Anti-Doping Organization shall impose an additional sanction based on the sanction that could have been imposed if the two violations would have been adjudicated at the same time. Results in all Competitions dating back to the earlier anti-doping rule violation will be disqualified as provided in Article 10.8. To avoid the possibility of a finding of aggravating circumstances (Article 10.6) on account of the earlier-in-time but later-discovered violation, the Athlete or other Person must voluntarily admit the earlier anti-doping rule violation on a timely basis after notice of the violation for which he or she is first charged. The same rule shall also apply when the Anti-Doping Organization discovers facts involving another prior violation after the resolution of a second anti-doping rule violation.

Multiple Anti-Doping Rule Violations During an Eight-Year Period. For purposes of Article 10.7, each anti-doping rule violation must take place within the same eight-year period in order to be considered multiple violations.
Disqualification of Results in Competitions Subsequent to Sample Collection or Commission of an Anti-Doping Rule Violation. In addition to the automatic Disqualification of the results in the Competition which produced the positive Sample under Article 9 (Automatic Disqualification of Individual Results), all other competitive results obtained from the date a positive Sample was collected (whether In-Competition or Out-of-Competition), or other anti-doping rule violation occurred, through the commencement of any Provisional Suspension or Ineligibility period, shall, unless fairness requires otherwise, be Disqualified with all of the resulting Consequences including forfeiture of any medals, points and prizes.

As a condition of regaining eligibility after being found to have committed an anti-doping rule violation, the Athlete must first repay all prize money forfeited under this Article. Allocation of Forfeited Prize Money Unless the rules of the International Federation provide that forfeited prize money shall be reallocated to other Athletes, it shall be allocated first to reimburse the collection expenses of the Anti-Doping Organization that performed the necessary steps to collect the prize money back, then to reimburse the expenses of the Anti-Doping Organization that conducted results management in the case, with the balance, if any, allocated in accordance with the International Federation’s rules.

Commencement of Ineligibility Period: Except as provided below, the period of Ineligibility shall start on the date of the hearing decision providing for Ineligibility or, if the hearing is waived, on the date Ineligibility is accepted or otherwise imposed. Any period of Provisional Suspension (whether imposed or voluntarily accepted) shall be credited
against the total period of Ineligibility imposed.

**Prohibited Substances and Methods**

The World Anti-Doping Agency annually updates the List of Prohibited Substances and Methods. The list is the International Standard defining what is prohibited in-competition and out-of-competition. The list also indicates whether particular substances are banned in particular sports.

**Athletes Responsibilities**

In accordance with WADA Code the athletes are responsible whenever a prohibited substance is found in their bodily specimen. This means that a violation occurs whether or not the athlete intentionally or unintentionally, knowingly or unknowingly, used a prohibited substance or was negligent or otherwise at fault.

**Latest Information**

Athletes should always check with their National Federations/International Federations (IFs) to find out what additional substances and methods are prohibited in their sports. Also, athletes should always make their doctor aware that they are bound by the specific rules of their sport. Those who are unsure of what a product contains should not take it until they are sure it is not prohibited. Ignorance is never an excuse.

**4.2 CONSCIOUSNESS ABOUT RIGHTS AND DUTIES OF PARTICIPANTS**

**Athletes' obligations:**

Be knowledgeable of and comply with all anti-doping policies and rules applicable to them, namely the Code, these rules, and the policies and rules of NADA and their National or International Federations; Take
responsibility, in the context of anti-doping, for what they ingest and use; and Inform medical personnel of their obligation not to Use Prohibited Substances and Prohibited Methods and to take responsibility to make sure that any medical treatment received does not violate the anti-doping policies and rules applicable to them.

All Athletes who are not regular members of a National Federation must be available for Sample collection conducted according to the Code and provide accurate and up-to-date whereabouts information on a regular basis, if required, during the year before the Olympic Games as a condition of participation in the Olympic Games as a member of the Indian Olympic Team.

Figure No.50 The Researcher is in interaction with Inter-national, National, Inter-University & University’s Inter-Zonal level various sports persons.
Athlete support personnel's obligations:

All Athlete Support Personnel must:

Be knowledgeable of and comply with all anti-doping policies and rules applicable to them or Athletes whom they support, namely the Code, these rules and the policies and rules of NADA and their National Federations; Co-operate with the Athlete Testing programme; and use their influence on Athlete values and behaviour to foster anti-doping attitudes.
National federations' obligations:

Each National Federation must Comply with these rules; Cooperate with and assist NADA fulfill its obligations under the Code; Adopt and implement an anti-doping policy that conforms with the Code; Cooperate with and assist its International Federation conduct its day-to-day anti-doping programmes; Require Persons who: participate in sport under its authority; or are registered as an athlete or competitor (however described) or as an Athlete Support Personnel with it or with a club recognized by it; to recognize and be bound by its anti-doping policy, the Code and these rules; Require Persons who: participate as an athlete or competitor (however described) in a sport under its authority; or are registered as an athlete or competitor (however described) with it or with a club recognized by it; to be available for Sample collection and provide accurate and up-to-date whereabouts information; Require as a condition of membership that the policies, rules and programmes of its members or clubs recognized by it are in compliance with the Code; and Take appropriate action to discourage non-compliance with the Code and its Anti-Doping Policy.

A national federation will also:

Recognize and respect a finding of an Anti-Doping Rule Violation by its International Federation or other Signatory or other National Federation without the need for a hearing provided the finding is consistent with the Code and within the authority of the body concerned; and

Require Athletes who are not regular members to be available for Sample collection and provide accurate and up-to-date whereabouts
information on a regular basis, if required, during the year before the Olympic Games as a condition of participation in the Olympic Games as a member of the Indian Olympic Team.

Promptly notify the IOC of the finding of any Anti-Doping Rule Violation or Doping Offence and the imposition of any sanction for an Anti-Doping Rule Violation or Doping Offence on: Any Person under its anti-doping policy and rules; or Any Athlete, Athlete Support Personnel or other Person under its authority or control under the anti-doping policy and rules of its International Federation.

Any Athlete, Athlete Support Personnel or other Person under its authority or control under the anti-doping policy and rules of its International Federation.

Provide assistance and information to the Indian Olympic Committee as requested by the Secretary General to enable the IOC to properly implement these Rules.

4.3 DOPING CONTROL PROCESS: GENERAL OVERVIEW OF DOPING CONTROL PROCEDURE

Athletes' selection:

Athletes can be selected for doping control at any time and any place.

Notification:

A Doping Control Officer (DCO) or chaperone will notify the athlete of selection for doping control. The DCO or chaperone will inform the athlete their rights and responsibilities, including the right to have a representative present throughout the entire process. Athlete will be asked to sign a form confirming that they have been notified for
doping control. For a minor or an athlete with a disability, a third party may be notified as well.

**Reporting to the doping control station:**

Athlete should report to the doping control station as soon as possible. The DCO may allow you to delay reporting to the station for activities such as a press conference or the completion of a training session; however athlete will be accompanied by a DCO or chaperone from the time of notification until the completion of the sample collection process.

**Selection of collection vessel:**

Athletes are given a choice of individually sealed collection vessels and athlete may select one. Athlete should verify that the equipment is intact and has not been tampered with. Athlete should maintain control of the collection vessel at all times.

**Provision of sample:**

Athlete and a DCO of the same gender are permitted in the washroom during the sample provision. Minors and athletes with a disability may also have their representative present, however this representative is not permitted to view the sample provision. The objective is to ensure that the DCO is observing the sample provision correctly.

**Volume of Sample:**

The DCO shall use the relevant laboratory specifications to verify, in full view of the athlete, that the volume (>90 ml) of the urine sample satisfies requirements for analysis.
Selection of doping control kit:

Athlete is given a choice of individually sealed sample collection kits from which to choose one. Athlete should verify that the equipment is intact and has not been tampered with. Open the kit and confirm that the sample code numbers on the bottles, the lids, and the container all match.

Sample division:

Athletes divide the sample, pouring the urine themselves, unless assistance is required due to disability. Pour the required volume of urine into the "B" bottle (>30 ml); and pour the remaining urine into the "A" bottle (>60 ml). Athlete will be to leave a small amount in the collection vessel so that the DCO can measure the specific gravity.

Sealing of sample:

Athlete should seal the "A" and "B" bottles. Athletes' representative and the DCO should verify that the bottles are sealed properly.

Measuring specific gravity:

If the sample does not meet the specific gravity requirement, athlete may be asked to provide additional samples.

Documentation:

Athlete should provide information on the doping control form about any prescription or non-prescription medication or supplements they have taken recently. Athlete also have the right to note comments on the form regarding the conduct of the doping control session. Be sure to confirm that all of the information is correct, including the sample code
number. Athlete should receive a copy of the doping control form. The laboratory copy of the form does not contain any information that could identify athlete.

**Analysis:**

Samples are packaged for shipping to ensure that their security is tracked. Samples are sent to a NADA-accredited laboratory, which will adhere to the International Standard for Laboratories when processing samples, ensuring the chain of custody is maintained at all times. "A" sample is analyzed. "B" sample is securely stored and may be used to confirm an Adverse Analytical Finding from the "A" sample. The laboratory will report the results of sample analysis to NADA and WADA.

If the athletes are a minor or an athlete with a specific type of disability, they may require slight modifications to the sample collection procedure. Minors may be accompanied by an athlete representative at all times & during the sample collection procedure, including in the washroom area; however, the representative will not witness the passing of the sample. If you have restricted mobility or restricted manual dexterity, you may ask the athlete representative or the DCO to assist you with mobility when handling equipment, splitting the sample, or completing paperwork.

Athletes with cerebral palsy or significant lack of coordination may use a larger collection vessel if available. Athletes with visual impairment may be accompanied by an athlete representative at all times during the sample collection procedure, including in the washroom area; however, the representative will not witness the passing of the sample.
The athlete representative or the DCO may read the doping control form to you, and you may ask the athlete representative to sign the doping control form on your behalf.

Athlete with an intellectual disability may be accompanied by an athlete representative at all times during the sample collection procedure, including in the washroom area however the representative will not witness the passing of the sample.

Athlete using condom drainage or indwelling catheter drainage should remove the existing collection bag and drain the system so that a fresh sample can be obtained.

Athletes who self-catheterize may use their own catheter to provide a sample (this catheter should be produced in tamper-evident wrapping), or use one provided at the DCO if available.

Results Management Process

During the Results Management Process, the following procedure is followed by NADA and WADA:

Upon receipt of an Analytical Findings for A sample from the laboratory (without bearing the name of athlete) the name of the athlete is decoded by NADA. If the A sample proves negative i.e. no Prohibited Substance or Methods detected, the athlete and the concerned National Federation (NF), International Federation (IF) and WADA shall be so informed. If an Adverse Analytical Findings is reported for A sample, NADA will conduct an Initial Review to determine whether: An applicable Therapeutic Use Exemption (TUE) has been granted or will be granted as provided in the International Standard for TUE. There is any
apparent departure from The International Standard for Testing or International Standard for Laboratories that caused the Adverse Analytical Finding.

If the initial review validates the TUE and -procedures for the prohibited substance(s) reported by the laboratory for A Sample, the sample is treated as negative, the athlete and the concerned NF, IF & WADA will be so informed.

If the Initial Review does not validate the Adverse Analytical Finding, the athlete is notified about his/her Adverse Analytical Finding of 'A' Sample. The concerned NF, IF and WADA are also notified.

If the Adverse Analytical Findings for A sample is for a Prohibited Substance that is not a specified substance, NADA shall provisionally suspend the athlete pending the hearing panel.

An athlete has the right to request for the analysis of his/her B Sample within seven (7) working days of receiving the notice concerning Adverse Analytical Finding of his/her A Sample.

If the athlete requests for 'B' Sample Analysis, NADA will contact the laboratory to schedule time unit and date and notify the athlete of the 'B' Sample Analysis.

If there is no request by the athlete to witness his/her 'B' Sample, NADA will inform the laboratory to conduct the 'B' sample Analysis in the presence of an Independent Observer.

If the 'B' sample Analysis by the laboratory proves negative, the entire test will be considered negative and the athlete, NF, (IF) and WADA shall be so informed.
If the 'B' Sample Analysis confirms that 'A' Sample Adverse Analytical Finding, a Second Notice will be served by NADA to the athlete along with a copy to the concerned parties i.e. NF, IF & WADA asserting the Anti Doping Rule Violation. The Anti Doping Disciplinary Panel will be also notified along with all documents relevant to the assertion, for disciplinary proceedings to be conducted in the positive case as per the WADA compliant Anti Doping Rules of NADA.

The athlete will be advised to present his/her case before the Anti Doping Disciplinary panel on the date & time fixed by the panel for hearing.

During the hearing process, the athlete is given an opportunity to be represented by Counsel and interpreter (at own expense) to establish basis for elimination or reducing the sanctions.

The athlete will have the right to appeal against the decision of the Anti Doping Disciplinary Panel by lodging a notice of appeal with the Anti Doping Appeal Panel within 14 days of the decision of the Anti Doping Disciplinary Panel.

The research evidence base for the effectiveness and main influential factors of contemporary drug abuse treatment. The study is designed to be a companion resource to the section on effective treatment and rehabilitation services in the publication "Drug abuse treatment and rehabilitation: a practical planning and implementation guide" and to the present study on drug abuse treatment: a discussion paper for policy makers" is explained in the following pages.

Most of the evidence for the impact of treatment comes from randomized controlled trials and uncontrolled observational evaluations
of treatments and treatment systems. Both types of studies assess the severity of problems for a sample of sportmen at intake to a treatment programme and then measure changes in those problems at one or more points during and after treatment. Experimental studies involve random assignment of groups of sportmen to specific interventions and comparison conditions. Where they are feasible, experimental designs offer the most convincing evidence on treatment efficacy. Observational evaluations are often large-scale activities that examine how effectively one or more types of treatment programme are delivered and how sportmen are assigned to them, but they include no manipulation of treatment conditions. Such studies are useful when there are general questions about the effectiveness of a treatment system; they can indicate if outcome expectations are achieved and how benefits of treatment vary across programmes and with the amount or type of treatment that sportmen receive.

A comprehensive survey of the relevant literature is beyond the remit of the present concise study and the cited studies are representative of a well-studied area or are notable for investigating a specific issue. The scope of the study is national and international. Most of the evidence for the effectiveness of treatment has been published by research groups working in the United States of America, in Europe and in several countries in the region of Asia and the Pacific, notably Australia. The summarized evidence presented here reflects that geographical reality, but cannot be said to be a comprehensive summary of the evidence from across the globe. Moreover, the reader will need to judge the extent to which the summarized findings can be applied to his or her own specific culture and treatment service-delivery context. No attempt is made to contrast directly the results of studies conducted on specific treatment
modalities across different nations. There are often substantial differences in the nature of sportsmen treated and the structure and operation of the treatment systems that make such comparisons uninformative. It is, however, worth noting that the findings for the impact of the main forms of structured treatment are remarkably similar across national and cultural divides. The study has been limited to work published in peer-studied, scientific journals in English. All of the research cited has used methodologically sound observational, naturalistic or controlled, experimental designs. A literature search was performed using Embase, Pubmed, Medline, PsychInfo and Cochrane databases from 1980 to May 2002.

Section of the study

The study consists of three sections. Parts 1 and 2 present research evidence for the effectiveness of the detoxification-stabilization phase and the rehabilitation-relapse prevention phase, respectively. Those phases contain treatments that have distinct goals, objectives and methods and are delivered in residential and community settings. Part 3 presents a discussion on a set of patient-related and treatment-related factors that are linked to treatment outcome. Patient-related factors include the severity of substance abuse, psychiatric symptoms, treatment readiness and motivation, employment and family and social support. Treatment-related factors include the setting of treatment, treatment completion and retention, pharmacotherapies, counseling, counselor and therapist effects, participation in self-help groups and issues concerning matching sportsmen to treatment.
1. The detoxification-stabilization phase of treatment

Sportsmen and treatment methods

The detoxification and stabilization phase of treatment is designed for people who experience withdrawal symptoms following prolonged abuse of drugs. Detoxification may be defined as a process of medical care and pharmacotherapy that seeks to help the patient achieve abstinence and physiologically normal levels of functioning with the minimum of physical and emotional discomfort. Pharmacotherapy involves the administration of a suitable agonist medication, in progressively diminishing amounts, to minimize withdrawal discomfort from opioid, barbiturate and benzodiazepine dependence, where a characteristic rebound physiological and emotional withdrawal syndrome is experienced usually around 8-12 hours following the last dose of the drug. Users of amphetamine and cocaine may also experience substantial emotional and physiological symptoms and will require a period of stabilizing treatment.

Indicators of effectiveness

The main goals of this phase include the safe management of medical complications, the attainment of abstinence and the motivation of a sportsmen cognitive and behavioural change strategies that are to be the focus of further rehabilitation efforts. On its own, detoxification is unlikely to be effective in helping sportsmen achieve lasting recovery; this phase is better seen as a preparation for continued treatment aimed at maintaining abstinence and promoting rehabilitation.
Pharmacotherapies

The evidence suggests that detoxification from illicit heroin and other opioids can be facilitated using dose-tapered opioid agonists (mainly methadone), the partial antagonist buprenorphine and two non-opioid drugs, clonidine and lofexidine (both ct2-adrenergic agonists).

However, evaluating the relative merits of those medications is hampered by differences in the operation of treatment programmes and various measurement issues to do with clinical assessments of withdrawal symptom severity. Allowing for this caveat, Gowing and colleagues conducted a Cochrane study of 218 international detoxification studies and calculated mean completion rates for in-sportsmen and out-sportsmen setting opioid detoxification of 75 per cent and 35 per cent, respectively, when using methadone and 72 per cent and 53 per cent, respectively, when using an ct2-adrenergic agonist. Several randomized controlled trials have contrasted between buprenorphine and clonidine. Results suggest that buprenorphine is better at reducing the severity of withdrawal symptoms and leads to fewer adverse effects.

Procedures for accelerating the time required for opioid detoxification using opioid antagonists have been available for several decades. The rapid opioid detoxification (RD) precipitates withdrawal with naloxone or naltrexone, while ultra-rapid opioid detoxification (URD) administers naloxone or naltrexone under anaesthesia or deep sedation. Both techniques induce a severe but short withdrawal syndrome and have been developed and studied in several countries. In a comprehensive study of 12 RD and 9 URD studies, O'Connor and Kosten note that substantial methodological variation hampers interpretation of the literature, which is also characterized by small sample sizes and
generally short follow-up periods. The general conclusion from these
studies is that while URD has some medical risks, those techniques do
not confer substantial advantage over existing detoxification methods,
nor are they more successful in inducting and retaining abstinent
sportsmen in relapse prevention pharmacotherapy using naltrexone.

Length of stay

Stabilization of acute withdrawal problems is typically completed
within 3-5 days, but this may need to be extended for sportsmen with
conjoint medical or psychiatric problems or physiological dependence
upon ben-zodiazepines and other sedatives. For methadone, the Gowing
group's study suggests that, when detoxification extends for more than 21
days, the mean rate of treatment completion is 31 per cent. This compares
with 58 per cent for treatment completed in 21 days or less. The authors
note that this may reflect treatment-setting effects to some extent, as 89
per cent of the studies that have a longer duration of detoxification were
conducted in a community setting.

Treatment setting

There has been much debate and study of the relative effectiveness
of detoxification treatment in hospital inpatient or other residential
settings or in outpatient or community-based settings. Residential settings
are generally associated with better completion rates, but in most
countries the prevailing practice is to stabilize all but the most severely
affected sportsmen in outpatient settings. For example, for sportsmen
with cocaine dependence, the literature is replete with accounts of early
dropouts during the first 14-21 days of outpatient treatment, with attrition
rates ranging from 27 per cent to 47 per cent in the first few weeks of
care. Detoxification is generally viewed as particularly appropriate for sportsmen who present with acute medical and psychiatric problems (in particular those with a history of seizure and depression) and also those who have concurrent acute alcohol dependence. Studies of shorter-term outpatient reduction programmes have generally reported poor outcomes with high patient dropout and few achieving abstinence. However, those sportsmen who have less acute problems and medical complications and have a stable, supportive home situation may well be able to complete detoxification in the community. Few studies have examined the appropriate setting for the stabilization of physiological and psychiatric signs and symptoms associated with psycho-stimulant use; however, a residential medical setting is generally required if the patient has acute psychiatric symptoms and emotional distress.

2. The rehabilitation- relapse prevention phase of treatment

Sportsmen and Treatment Methods

Rehabilitation is appropriate for sportsmen who are no longer suffering from the acute physiological or emotional effects of recent substance abuse. Goals of this phase of treatment are to prevent a return to active substance abuse, to assist the patient in developing control over urges to abuse drugs and to assist the patient in regaining or attaining improved personal health and social functioning.

Treatment elements and methods

Professional opinions vary widely regarding the underlying reasons for the loss of control over alcohol and/or drug use typically seen in treated sportsmen. A number of explanatory mechanisms have been suggested, including genetic predispositions, acquired metabolic abnormalities, learned, negative behavioural patterns, deeply ingrained
feelings of low self-worth, self-medication of underlying psychiatric or physical medical problems and lack of family and community support for positive function. There is an equally wide range of treatment strategies and treatments that can be used to correct or ameliorate those underlying problems and to provide continuing support for the targeted patient changes. Strategies have included such diverse elements as medications for psychiatric disorders; medications to relieve drug craving; substitution pharmacotherapies to attract and rehabilitate sportsmen; group and individual counseling and therapy sessions to provide insight, guidance and support for behavioural changes; and participation in peer help groups (e.g. Narcotics Anonymous) to provide continued support for abstinence.

**Duration**

Short-term residential rehabilitation programmes are typically delivered over 30-90 days; residential therapeutic community programmes usually range from three months to one year; outpatient, abstinence-oriented counseling programmes range from 30 to 120 days; and methadone maintenance programmes can have an indefinite time period. Many of the more intensive forms of outpatient treatment (e.g. intensive outpatient and day hospital) begin with full- or half-day sessions five or more times per week for approximately one month. As the rehabilitation progresses, the intensity of the treatment is reduced to shorter sessions of one to two hours delivered twice a week and then tapering to once a week. The final stage of outpatient treatment is typically called “continuing care” or “aftercare”, with biweekly to monthly group support meetings (in association with parallel activities in self-help groups) continuing for as long as two years.
Defining outcome domains

The effectiveness of this phase of treatment can be judged against three outcome domains that are relevant both to the rehabilitative goals of the patient and to the public health and safety goals of society: (a) elimination or reduction of alcohol and drug use; (b) improved health and functioning; and (c) reduction in public health and public safety threats. The threats to public health and safety from substance abusing individuals come from behaviours that spread infectious diseases (including blood exchange arising from unprotected penetrative sex and sharing needles and other injection-related equipment) and engaging in crime to fund or sustain drug abuse. Regardless of the specific setting, modality, philosophy or methods of rehabilitation, all forms of rehabilitation-oriented treatment for addiction have the following four goals: (a) to maintain physiological and emotional improvements initiated during detoxification-stabilization; (b) to enhance and sustain reductions in alcohol and drug use (most rehabilitation programmes suggest a goal of complete abstinence); (c) to teach, model and support behaviours that lead to improved personal health, improved social function and reduced threats to public health and public safety; and (d) to teach and motivate behavioural and lifestyle changes that are incompatible with substance abuse.

Main effects of residential treatment

There is a sizeable and long-standing body of international research evidence for the positive impact of residential programmes in the three outcome domains. By way of a typical example, results from the largest major evaluation of residential rehabilitation programmes in the United States showed the following reductions in the proportion of sportsmen...
using illicit substances at least once a week during the year prior to admission and during the year following departure from treatment: the proportion of sportsmen using cocaine decreased from 66 to 22 per cent; the proportion using cannabis, from 28 to 13 per cent; and the proportion using heroin, from 17 to 6 per cent. Clients who complete treatment also achieve better employment and are substantially less likely to be involved in crime. However, dropout from residential rehabilitation does seem to be a common problem, and studies typically report attrition levels of 25 per cent of sportsmen within two weeks and 40 per cent by three months.

**Sportsmen-related factors**

A variety of studies of treatments in different national contexts have shown that the chronicity and severity of sportsmen' substance use patterns have been reliably associated with poorer retention in treatment and more rapid relapse to substance use following treatment.

**Severity of psychiatric problems**

International epidemiological population surveys and clinical studies have shown that people with substance abuse and dependence disorders are prone to have anxiety, affective and anti-social and other personality disorders. Outcome studies of dependent opioid-and cocaine-abusing sportsmen suggest that, for most sportsmen, psychiatric symptoms improve early on in treatment and that, on average, there are sustained reductions in symptom levels over medium- and long-term follow-up. However, a consistent finding across many studies and contexts is that severe psychiatric symptoms and disorders at intake to treatment are a reliable predictor of dropout and poorer follow-up outcomes.
Treatment readiness and motivation

Sportsmen who report being ready and motivated to receive treatment tend to engage more successfully with the therapeutic programme and stay in treatment for longer periods of time. Interestingly, sportsmen who have been mandated to enter substance abuse treatment have shown outcomes that are quite similar to those who are self-referred and supposedly more “internally motivated”.

Employment Many people with drug abuse problems have enduring difficulties with obtaining and retaining paid employment. Unemployed sportsmen are more likely to drop out of treatment prematurely and to relapse to substance abuse. Although the ability of a treatment programme to secure a job for a client may be limited, community services will usually seek to help a client to improve employment opportunities and securing or maintaining a job is recognized as an important goal. Employment has been found to predict retention in treatment and good outcome. For example, in a sample of primarily employed, multiple substance abusers entering private inpatient or outpatient programmes, McLellan and colleagues showed that employment problems were one of the most significant predictors of post-treatment substance abuse and other aspects of poor health and social functioning.

Family and social supports

Social supports have been widely studied in the drug abuse and dependence field. Social support has been conceptualized variously as the availability of relationships that are not conflict-producing and supportive of abstinence; and the active participation in peer-supported treatments
such as Narcotics Anonymous. Stressful life events (such as the loss of a job, bereavement or the ending of a personal relationship) may exert a more powerful effect in determining individual outcomes than treatment itself. It follows that treatment goals may not be reached at all or may attenuate rapidly following treatment if the patient's environmental resources are limited. Effective treatments for substance abuse look beyond the programme to assist the patient in becoming included in society and improving family relationships and personal resources.

**Treatment-related factors**

Setting of treatment

Many studies have investigated differences in effectiveness between various forms of hospital inpatient and outpatient/day rehabilitation treatments. Much of the literature concerns alcohol dependence and has reported positive main effects for treatment and generally few interactions with setting. Experimental studies of inpatient or outpatient treatment for cocaine dependence have resulted in the same conclusion. For example, Alterman and colleagues compared the effectiveness of four weeks of intensive, highly structured day hospital treatment (27 hours weekly) with inpatient treatment (48 hours weekly) for cocaine dependence. The subjects were primarily inner city, male African Americans treated at a United States Veterans Administration Medical Center. The inpatient-treatment completion rate of 89 per cent was significantly higher than the day-hospital completion rate of 54 per cent. However, at seven months after treatment, self-reported outcomes indicated considerable improvements for both groups in drug and alcohol use, family/social, legal, employment and psychiatric problems. The comparability of the two treatment settings was also evident in 12-month
outcomes. The general conclusions from this work are that, for most treatment systems, it is likely that sportsmen who have sufficient personal and social resources and who present with no serious medical complications should be assessed for outpatient/day treatment. Given the typically high demand for residential care, it seems logical to prioritize that setting for those with acute and chronic problems who have social stressors and/or environments that are likely to interfere with treatment engagement and recovery.

**Treatment completion and retention**

There is a substantial amount of literature to support the assumption that sportsmen who complete treatment will have better outcomes than those who leave prematurely. Generally, longer stays in outpatient maintenance and residential rehabilitation programmes are related to better follow-up outcomes. Benefits increase with time in the programme and retention is a fairly reliable proxy measure of success for most types of treatment. Given that most people who are studied in drug abuse treatment programmes have chronic and diverse problems, it is to be expected that the longer they remain in treatment, the greater the likelihood that significant lifestyle improvements will be achieved and consolidated. A consistent finding from the United States' national outcome studies is that sportsmen who stay for at least three months in residential programmes have superior post-departure outcomes than sportsmen with shorter stays. In a landmark study, aggregate data from a sample of sportsmen entering therapeutic community programmes showed that remaining in treatment for one year or more is significantly related to improvements at 12-month post-discharge follow-up. This finding has been replicated in the United Kingdom of Great Britain and
Northern Ireland, where the greatest levels of abstinence for opioid abuse at one-year follow-up were associated with 28 days of inpatient and shorter-stay residential participation (effectively a measure of programme completion) and 90 days in the longer-term residential programmes. Also, sportsmen who stay for at least one year in outpatient methadone treatment have substantially better outcomes than those who leave before that point. There is less clear-cut evidence for the retention and duration effects of community abstinence-oriented counseling services. To date, no link has been found between treatment duration and outcome for such services. This may be due to diversity in organizational practices and patient differences.

The time spent in treatment does not directly mediate good outcome. Staying in treatment enables the patient to acquire new skills and to make progress in the programme. For example, Toumbourou and colleagues reported outcomes for a sample of Australian sportsmen who had been treated in a therapeutic community. The time spent in treatment was related positively to improved outcomes, but the extent or level of therapeutic progress attained emerged as a stronger predictor of outcome than simply the time spent in treatment. Overall, the issue of how long sportsmen are able to spend in treatment is a key fiscal issue for most treatment systems. The implications of this work are that treatment service personnel and the wider care coordination infrastructure should ensure that sportsmen are retained in treatment for at least the minimum threshold for success, and where possible, treatment duration should be determined by patient need. There are also important implications for targeting people who leave treatment at an earlier point, since those individuals are characterized by substantially poorer outcomes.
Pharmacotherapies

Several main forms of pharmacotherapy for opioid dependence have been developed and widely evaluated for their role in the rehabilitation-relapse prevention phase.

Methadone

Originally developed in the mid-1960s in New York, daily dosing with methadone prevents withdrawal symptoms for approximately 24 hours. After initial trials, the treatment was extended to other localities across the United States and has been evaluated in considerable depth by American research groups in single- and multi-site evaluations across three decades and more recently by evaluators in many other countries. Those efforts have established a considerable international treatment base for oral methadone maintenance treatment and an impressive research evidence base for its effectiveness. For example, a recent national cohort study in the United Kingdom has reported sustained reductions in heroin abuse among sportsmen who entered methadone maintenance treatment after six months and one- and two-year follow-ups. A robust finding is that the dose of methadone has a positive linear relationship with retention in treatment and a negative linear relationship with heroin abuse. For example, Ling and his colleagues showed that 100 milligram (mg)/day was superior to 50 mg as indicated by staff ratings of global improvement and by a drug use improvement index based on urine testing. In a study of moderate (40-50 mg) and high (80-100 mg) dose methadone, Strain and his colleagues found a significantly lower rate of opiate positive urine specimens among sportsmen receiving the high dose of methadone (53 per cent versus 62 per cent). Several studies have shown that people on higher doses (around 50 mg/day and above) are more likely to be retained
in treatment and less likely to continue to abuse heroin. For example, one study that assigned sportsmen randomly to higher or lower dose methadone maintenance found that the proportion of toxicology tests that were positive for opioids was 45 per cent for the higher-dose group compared with 72 per cent for the lower-dose group. In a similar study Strain's group found a high-dose regimen to be associated with significantly lower rates of opioid-positive urine samples, although there was no significant difference in rates of retention.

As an overall summary of the impact of methadone treatment, Marsch conducted a statistical meta-analysis of 11 studies that reported illicit opioid use, 8 studies that reported on human immunodeficiency virus (HIV) risk behaviours and 24 studies reporting on changes in criminal involvement. Her study showed that there is a consistent statistically significant relationship between maintenance treatment and the reduction of illicit opioid use, HIV risk behaviours and drug and property crimes. Kreek has concluded that methadone maintenance with adequate doses of medication and access to counseling and medical and psychiatric care leads to voluntary one-year retention of 60-80 per cent with reduction of daily illicit opioid use from 100 per cent on entry to treatment to less than 20 per cent within one year.

Levoalphacetylmethadol (LAAM) is a longer acting form of methadone. Dosing in the range of 70-100 mg is capable of suppressing withdrawal symptoms for 48-72 hours and permits administration three times a week. Rawson and his colleagues summarized findings from 27 trials of oral LAAM involving more than 4,000 sportsmen and concluded that LAAM achieved comparable outcomes to methadone. A meta-analysis of randomized controlled trials concluded that, while LAAM and
methadone maintenance were of equivalent effectiveness in terms of capacity to reduce illicit drug use, there were small but statistically significant differences favouring methadone maintenance in treatment retention rates and rates of discontinuation of treatment because of side effects. LAAM may, however, be permanently withdrawn in Europe following 10 cases of life-threatening cardiovascular complications. The United States authorities have examined the issue but have not taken the same action as the European authorities to date. Recently Clark and colleagues have reported the results of a Cochrane study of 15 randomized controlled trials and 3 controlled prospective studies to compare LAAM with methadone maintenance. They concluded that LAAM appeared to be more effective at reducing heroin abuse than methadone. However, there are insufficient data in the published evidence to comment on uncommon adverse events.

**Buprenorphine**

Buprenorphine is a synthetic opioid partial agonist with mixed agonist and antagonist properties. It was originally recognized in the 1970s as a potentially useful treatment for opioid dependence. Research has shown buprenorphine to be an effective maintenance agent and to have a better safety profile in overdose than methadone and other agonists. Buprenorphine has been used for many years in France for maintenance treatment of dependent heroin users. There is now a growing number of sportsmen treated with buprenorphine in several other European countries, including Austria, Switzerland and the United Kingdom. There is also interest in this treatment agent in the region of Asia and the Pacific and an ongoing research and development programme in Australia.
The general view is that buprenorphine can be prescribed in higher doses in maintenance treatment without undue sedation. Ling and his colleagues have reported results from a multi-centre, double-blind trial of treatment in 12 sites in the United States and Puerto Rico. The team contrasted 1 mg/day and 8 mg/day and found that the higher-dosing group achieved significantly better retention and drug use outcomes. Buprenorphine is also effective for detoxification, producing less severe and protracted withdrawal symptoms than methadone. Another advantage of buprenorphine is that it has a longer half-life than methadone and is capable of less than daily dosing. The research evidence suggests that a doubled dose every two days or a tripled dose every three days are acceptable to sportsmen and do not induce untoward agonist or withdrawal effects.

Further research and development work is now required to assess the patient groups and delivery arrangements best suited to buprenorphine maintenance. At the time of writing, buprenorphine has not yet been approved for use in the United States.

Naltrexone

The opioid antagonist naltrexone may be used as part of relapse prevention programmes. A single maintenance dose of naltrexone binds to opioid receptor sites in the brain and blocks the effects of any opioids taken for the next 24 hours. It produces no euphoria, tolerance or dependence. Sportsmen generally require 10 days of abstinence before induction onto naltrexone (but see the accelerated detoxification procedures above). The effectiveness of naltrexone treatment clearly hinges on a patient’s compliance with treatment and the motivation to take their medication each day. In the largest multi-site study comparing
naltrexone with placebo, compliance was found to be the main weakness of this treatment. Patient attrition from the trial was substantial, with 543 of 735 people selected for inclusion failing to commence treatment; of the 192 who did begin treatment just 13 (7 of 60 in the naltrexone group and 6 of 64 in the placebo group) completed their scheduled nine-month programme. This has been a general problem with naltrexone outcome studies. In their study of 11 evaluations, Tucker and Ritter note that, in 4 studies, of those sportsmen who were offered naltrexone, between 3 per cent and 49 per cent actually commenced treatment; in a further 5 studies, between 23 per cent and 58 per cent of participants left within the first week; and in another 4 studies between 39 per cent and 74 per cent of participants left treatment by the end of the second week. These studies also identified nine studies that involved unselected participants (i.e. those not necessarily demonstrating high motivation or with external reinforcers for abstinence). In these studies retention periods varied between 43 days and eight months. Several interesting outcome studies have compared naltrexone and methadone maintenance treatment. In one, 60 consecutive patient admissions were able to select which of the treatments they wished to enter. The sportsmen in the methadone group were retained in treatment significantly longer than those in the naltrexone group; 8 of 30 naltrexone sportsmen compared with 26 of 30 methadone sportsmen remained in treatment for the full 12 weeks of treatment. However, there were no differences in illicit heroin abuse during treatment or in the numbers attaining complete abstinence. Finally, a large cohort study in Italy reported one-year retention rates for 40 per cent of sportsmen in methadone maintenance and 18 per cent for those in naltrexone treatment. In contrast, for highly motivated or compliant sportsmen, the effectiveness of naltrexone is generally good (at least for
the duration of treatment). For example, Brahen and colleagues reported a retention rate of 75 per cent when naltrexone treatment was used as part of a prisoner work-release programme. In another study 61 per cent of business executives and 74 per cent of physicians remained in naltrexone treatment for six months with good outcomes. A Cochrane study of naltrexone concludes that the available trials do not permit a firm assessment of the worth of naltrexone maintenance, but the data do support this treatment approach for those who are highly motivated and when used in conjunction with various psychosocial therapies.

There have been many attempts to develop antagonists for the treatment of cocaine dependence; while the research is quite extensive, the results have been disappointing. At the time of writing, there is no convincing evidence that any of the various types of cocaine blocking agent are truly effective for even a significant minority of affected sportsmen. Research continues in this important area and there have been indications of a potentially successful "vaccine" that may be able to immediately metabolize and inactivate active metabolites of cocaine. This promising work is currently being tested in animal models, but there are no treatment relevant medications available for cocaine rehabilitation at the present time.

People who have acute cocaine dependence experience depletion in levels of the neurotransmitter dopamine. Dopamine agonists have been proposed as an effective treatment for managing cocaine withdrawal, craving and negative mood effects. Amantadine and bromocriptine have been the most widely studied. A Cochrane study by Soares and colleagues of 12 placebo-controlled studies has concluded that there is no significant effect of these medications. Several types of (mainly tricyclic)
anti-depressant have also been evaluated as pharmacotherapy for cocaine withdrawal symptoms and dysphoria. In two Cochrane studies of 23 studies, Lima and colleagues concluded that the overall evidence was not favourable, principally because of high patient dropouts.

**Counseling**

Access to regular substance abuse counseling can make an important contribution to the engagement and participation of the patient in a treatment programme and to its outcome. For example, in an important study, sportsmen in methadone maintenance were randomly assigned to receive counseling or no counseling in addition to their methadone dose. Results showed that 68 per cent of sportsmen assigned to the no-counseling group failed to reduce drug abuse and that one third of those sportsmen required at least one episode of emergency medical care. In contrast, 63 per cent of the patient group assigned to receive counseling showed sustained elimination of opiate use and 41 per cent showed sustained elimination of cocaine use over the six months of the trial. The positive impact of individual or group counseling and attendance at 12-step meetings has been observed in another study where greater frequency of attendance at counseling and self-help groups were associated with lower risk of relapse over the subsequent six months. Several types of counseling and behavioural treatments have been studied.

**Sportsmen drug-free counseling**

Sportsmen drug-free counseling provision in the United States has been evaluated in a variety of studies and by national outcome investigations. Results suggest that abstinence-oriented counseling is
associated with reductions in drug use and crime involvement together with improvements in health and well-being. In one study, the proportion of sportsmen using cocaine weekly or more frequently dropped from 41 to 18 per cent at one-year follow-up, while weekly or more frequent cannabis use was reduced from 25 to 9 per cent and heroin from 6 to 3 per cent. In a study of counseling for cocaine dependence, Alterman's group contrasted a structured day programme delivering around 30 hours of counseling per week with an intensive four-week inpatient programme. Substantial improvements were seen for sportsmen in both treatment settings at 7- and 12-month follow-up. Another evaluation demonstrated that increased frequency of attendance in individual and group counseling in community counseling treatment was related to a lower risk of relapse over a six-month follow-up.

Specific cognitive psychotherapies

A group of studies has also examined the relative effectiveness of general counseling or specific forms of psychotherapy. In one study, sportsmen were randomly assigned to receive standard non-specific counseling or counseling with the addition of either supportive-expressive psychotherapy or cognitive-behavioural psychotherapy over six months. Results showed that sportsmen receiving psychotherapy showed greater improvements in illicit drug use, health and crime involvement than those receiving standard counseling. In a contrasting study, Crits-Christoph and colleagues randomly assigned sportsmen with cocaine dependence to six months of 12-step group counseling only or to one of three forms of supplementary individual counseling (12-step, cognitive psychotherapy or supportive expressive psychotherapy). Results showed that reductions in cocaine use were greater amongst those sportsmen receiving both
group and individual 12-step counseling. Sportsmen receiving the supplementary cognitive psychotherapies were found to have equivalent outcomes to the sportsmen receiving group counseling only.

William Miller and his colleagues have developed a style of brief therapeutic intervention known as "motivational interviewing" designed to facilitate a patient's internally motivated commitment to change. This has been applied in the context of treating heroin users. In Australia, Saunders and colleagues reported the results of using a one-hour motivational session using a controlled trial design with sportsmen receiving methadone maintenance. At six-month follow-up, sportsmen who received the motivational intervention reported less illicit drug use, remained in treatment longer and relapsed to heroin use less quickly as compared with controls. Brief motivational counseling techniques have also been adapted for the treatment of cannabis use disorders and positive results have been reported in two United States trials and also by a research team working in Australia.

**Cognitive-behavioural approaches**

Of all the psychosocial counseling approaches, relapse-prevention-oriented cognitive-behavioural therapy has received the most frequent evaluation. Considerable research efforts have gone into evaluating the effectiveness of cognitive-behavioural therapy with sportsmen with alcohol dependence, focusing on social and communication skills training, stress and mood management and assertion training. A smaller set of studies has addressed the impact of the treatment with other drug abusers, with favourable results. In the United States, several cognitive-behavioural therapy protocols, notably contingency reinforcement therapy, that incorporate behavioural elements have also produced encouraging results with abstinent cocaine users. For example, in two
studies involving 90 severely disadvantaged cocaine users (88 per cent of whom were using crack cocaine).

Kirby and colleagues investigated the effect of adding voucher payments for cocaine-free urine screens to a comprehensive treatment package. The treatment package was delivered over three months and comprised 26 sessions of cognitive-behavioural therapy and 10 one-hour sessions of interpersonal problem-solving. In the first study, voucher delivery was on a weekly basis with initial values low, increasing with production of consecutive negative results, and reset to zero on production of positive screens. In that study the use of vouchers was found to have no effect.

The second study involved 23 subjects. Half the group received vouchers on a weekly basis, while the other half received vouchers immediately on producing the cocaine-free urine. There were significant improvements on measures of abstinence for immediate compared with weekly voucher delivery. About half the participants on immediate voucher delivery completed treatment and showed continuous abstinence at one month following treatment, whereas none of the participants on weekly voucher delivery achieved one month of continuous abstinence.

Another study examined the effects of adding brief coping skills training or a control “attention placebo” condition to a comprehensive treatment package incorporating both 12-step and social learning principles. Both approaches were administered on an individual basis in eight one-hour sessions with three to five sessions per week based on length of stay. One hundred and eight subjects from an original sample of 128 were considered to have received at least 50 per cent treatment exposure and 73 per cent of these were approached for follow-up.
There were no differential effects of the two additional interventions in terms of total abstinence during the three-month follow-up period. However, there were significant reductions in days of use as well as length of bingeing for participants in the coping skills treatment group compared with those receiving a placebo. Overall, the authors concluded that the brief skills intervention led to shorter and less severe relapses. Trial evaluations have also provided good evidence for the effectiveness of structured cognitive-behavioural therapy with cocaine users compared with no-treatment controls.

However, a more useful test of cognitive-behavioural therapy involves contrasts with existing treatments. Here the evidence is somewhat mixed. In one study, 42 dependent cocaine users were assigned at random to receive a 12-week programme of individual cognitive-behavioural therapy or interpersonal psychotherapy. Results showed that the cognitive-behavioural therapy sportsmen were more likely to complete treatment (67 per cent versus 38 per cent), achieve three or more continuous weeks of abstinence (57 per cent versus 33 per cent) and be continuously abstinent for four or more weeks after they left treatment (43 per cent versus 19 per cent). Treatment gains were most evident in a group of severe cocaine users, who were more likely to achieve abstinence if assigned to receive cognitive-behavioural therapy. Maude-Griffin and colleagues assigned crack cocaine smokers at random to either cognitive-behavioural therapy or 12-step counseling and Cocaine Anonymous participation.

Participants attended three group and one individual therapy session per week over 12 weeks. Attendance at treatment groups was low, with just 17 participants (13 per cent) attending at least 75 per cent of
both group and individual sessions. Overall 44 per cent of the cognitive-behavioural group and 32 per cent of the 12-step facilitated group achieved four consecutive weeks of abstinence from cocaine. In another study, cocaine-dependent sportsmen who continued to use cocaine during a four-week intensive outpatient treatment programme had much better cocaine use outcomes if they subsequently received aftercare that included a combination of group therapy and a structured relapse prevention protocol delivered through individual sessions rather than aftercare that consisted of group therapy alone.

**Community reinforcement and contingency contracting**

In the late 1970s Azrin and colleagues developed the community reinforcement approach as a treatment for alcohol dependence with favourable results. Using that model, Higgins and colleagues examined multiple variations on the community reinforcement approach with cocaine-dependent sportsmen. In their studies cocaine-dependent sportsmen seeking outpatient treatment were randomly assigned to receive either standard drug counseling and referral to Alcoholics Anonymous or a multi-component behavioural treatment integrating contingency-managed counseling, community-based incentives and family therapy comparable to the community reinforcement approach model.

The latter retained more sportsmen in treatment, produced more abstinent sportsmen and longer periods of abstinence and produced greater improvements in personal function than the standard counseling approach. Following the overall findings, this group of investigators systematically “disassembled” the community reinforcement approach model. They examined the individual “ingredients” of family therapy
(incentives and contingency-based counseling) by comparing outcomes for groups who received comparable amounts of all components except the target ingredient. In each case, their systematic and controlled examinations indicated that the targeted individual component made a significant contribution to the outcomes observed, thus proving their added value in the rehabilitation effort.

Counselor and therapist effects

Several studies have looked at the acquisition and influence of positive therapeutic working relationships between the treatment therapist, counselor, and the patient. Therapeutic involvement (measured by rapport between counselor and sportsmen and the sportsmen's ratings of their commitment to treatment and its perceived effectiveness) together with counseling session attributes (the number of sessions attended and the number of health and other topics discussed) have a direct positive effect on retention. These findings are supported by several other valuable studies that suggest that programme counselors who possess strong interpersonal skills, are organized in their work, see their clients more frequently, refer clients to ancillary services as needed and generally establish a practical and "therapeutic alliance" with the patient achieve better outcomes.

It is important to stress that not all counselors are equally effective with their sportsmen. Differences in outcome are found between professional psychotherapists with doctoral-level training and among paraprofessional counselors. For example, Luborsky and colleagues found outcome differences in a variety of areas among nine professional therapists providing ancillary psychotherapy to methadone maintenance sportsmen. McLellan and the same group found that assignment to one of
five methadone maintenance counselors resulted in significant differences in treatment progress over the following six months. Specifically, sportsmen transferred to one counselor achieved significant reductions in illicit drug use, unemployment and arrests, while concurrently reducing their average methadone dose. In contrast, sportsmen transferred to another counselor showed increased unemployment and illicit drug abuse as well as needing higher doses of methadone.

"Matching" sportsmen and treatments

There have been a substantial number of research studies that have attempted to "match" particular "kinds" of sportsmen with specific types, modalities or settings of treatment. The approach to sportsmen-treatment "matching" that has received the greatest attention from substance abuse treatment researchers involves attempting to identify the characteristics of individual sportsmen that predict the best response to different forms of addiction treatments, such as cognitive-behavioural therapy versus 12-step, or inpatient versus outpatient.

In general, the majority of these "patient-to-treatment" matching studies have not shown robust or generalizable findings. Another approach to matching has been to assess the nature and severity of sportsmen' problems at intake and then to "match" the specific and necessary services to the particular problems presented at the assessment. This has been called "problem-to-service" matching. This approach may have more practical application as it is consonant with the "individually tailored treatment" philosophy that has been espoused by most practitioners. In this regard, McLellan and colleagues attempted to match problems to services in two in-sportsmen and two out-sportsmen private treatment programmes.
Sportsmen in the study were assessed at intake and placed in a programme that was acceptable to both the referrer and the sportsmen. At intake, sportsmen were also assigned randomly to either the standard or “matched” services conditions. In the standard condition, the treatment programme received assessment information and personnel were instructed to treat the patient in the “standard manner, as though there were no evaluation study ongoing”.

The programme staff was instructed not to withhold any services from sportsmen in the standard condition. Sportsmen who were randomly assigned to the matched services condition were also placed in one of the four treatment programmes and assessment information was forwarded to that programme. The programmes agreed to provide at least three individual sessions in the areas of employment, family/social relations or psychiatric health delivered by a professionally trained staff person to improve functioning in those areas when a patient showed a significant degree of impairment in one or more of the areas at intake.

In fact, matched sportsmen received significantly more psychiatric and employment services than standard sportsmen, but similar family/social services or alcohol and drug services. Matched sportsmen were also more likely to complete treatment (93 per cent versus 81 per cent), and showed more improvement in the areas of employment and psychiatric functioning than the standard sportsmen. Furthermore, they were also less likely to be retreated for substance abuse problems after discharge during the six-month follow-up. These findings suggest that matching treatment services to adjunctive problems can improve outcomes in key areas and may also be cost-effective as they reduce the need for subsequent treatment due to relapse.
Substance abusers with co-morbid psychiatric problems may be particularly good candidates for the "problem-to-service" matching approach, especially the addition of specialized psychiatric services for those most severely affected by psychiatric problems. As compared with less structured interventions, highly structured relapse prevention interventions may also be more effective in decreasing cocaine use in cocaine abusers with co-morbid depression. Woody and colleagues evaluated the value of individual psychotherapy when added to paraprofessional counseling services in the course of methadone maintenance treatment.

Sportsmen were randomly assigned to receive standard drug counseling alone or drug counseling plus one of two forms of professional therapy (supportive-expressive psychotherapy and cognitive-behavioural therapy) over a six-month period. Results showed that sportsmen receiving psychotherapy showed greater reductions in drug use, more improvements in health and personal function and greater reductions in crime than those receiving counseling alone.

Stratification of sportsmen according to their levels of psychiatric symptoms at intake showed that the main psychotherapy effect was seen in those with greater than average levels of psychiatric symptoms. Specifically, sportsmen with low symptom levels made considerable gains with counseling alone and there were no differences between types of treatment. However, sportsmen with more severe psychiatric problems showed few gains with counseling alone but substantial improvements with the addition of the professional psychotherapy.
In this chapter, we have briefly discussed the Rehabilitation substance on abuse treatment research literature and identified sportsmen and treatment-related variables associated with outcome. There is an established evidence base for the effectiveness of both the detoxification-stabilization phase and rehabilitation-relapse prevention phase. There is no simplistic summary that can be given for this body of work.

However, there is strong evidence to show that treatment programmes are able to meet their goals and objectives and confer important benefits on sportsmen, their families and the wider community and society. There are differences in outcome associated with different types of treatment approach, setting, medication and patient group.