EXPERIMENTAL RANDOM SPOT TESTING FOR DRUGS IN SPORTSMEN

M. T. LUCKING, MRCS, LRCP

467 Lytham Road, BLACKPOOL, Lancashire

ABSTRACT

Twenty-eight active international athletes agreed to be available for random spot urine collections at their homes, places of work and training. Suitable briefed collectors were arranged to conduct the spot collections and forward the specimens for analysis. An average number of 3.4 collections per athlete was made in the 9 month period of the trial. Overall there was a "failure to collect" percentage of 14 during the winter months and 54 during the summer months. The average time interval between initial contact with the athlete and collection was 11 hours 50 minutes. It is concluded that random spot collections of urine from active athletes in training is possible and practical. Improved collection rates could be achieved by additional spot collection at athletic events during the summer and by using regionally based mobile collectors responsible for several athletes.

OBJECT OF TRIAL

To determine the practicality and most efficient methods of collecting and transporting urine specimens from active athletes for drug analysis during the training period.

SUBJECTS

Members of the International Athletics Club (I.A.C.) of Great Britain and Northern Ireland* were asked to volunteer to be available for spot testing, and 28 of the 75 volunteers were chosen to participate in the trial, 17 men and 11 women, representing 13 separate track and field events. The subjects were selected deliberately from locations scattered geographically throughout England, Wales, Scotland and Northern Ireland.

COLLECTORS

It was predetermined by the I.A.C. that collectors should be either qualified Doctors or State Registered Nurses. Having determined the places of work, training and addresses of the athletes, a suitable collector was sought for each individual. A total of twenty-eight different collectors were recruited; some collected from a group of athletes and some from one athlete only.

RULES

All athletes signed a volunteering statement (appendix A) expressing their willingness to participate and abide by the regulations (appendix B). It also detailed their usual whereabouts at certain times and any regular

*Qualification for membership — International representation in Track and field athletics.

Classification of Collectors

DOCTORS	Athlete's General Practitioner	4
	Medical members of the British Association of Sport and Medicine	7
	Occupational Medical Personnel	3
	Athletes' Clinics in Teaching Hospitals	5
NURSES (Female athletes only)	Health Visitors	6
	Clinic & District Nurses	3

The collectors were chosen because normally they practised within easy travelling distance of the athlete. One larger area extending approximately 120 miles by 60 miles was covered by one collector.

medication. All collectors were asked to perform each collection according to a specified routine (appendix C) designed to eliminate the presentation of false specimens.

METHOD

It was determined to carry out an average of about 4 tests per athlete during the period November 1979 and July 1980. At completely random times throughout the trial period the central organiser despatched boxes (7" x 7" x 3") containing 2 urine collecting bottles and other collecting materials (see appendix D) to the collector. Upon receipt of the box the collector contacted the athlete by 1st class post or by telephone and

made arrangements to meet at the earliest possible time for collection. The venue was a matter of convenience between the collector and the athlete, and fell into 3 categories:— Athlete's home (30%), place of work (30%), and collector's clinic or surgery (40%). The collectors then repacked the specimens and posted them by 1st class post to the Chelsea College for analysis.

RESULTS

Total number of successful collections 96
Average number of collections per athlete 3.4

ANALYSIS	No. of athletes		%failure/athlete	
		M	F	
More than 3 collections (Average 4.5 per athlete)	20	12	8	10%
Two collections	3	2	1	60%
One collection	4	2	2	80%
No collections	1	1	0	100%

Average time interval between initial contact and collection 11 hours 50 mins.

(Range: Immediate to 48 hours)

All tests completed were **NEGATIVE** for banned drugs.

Seasonal variation:

Failure percentage	Winter (Nov.-Mar.)	14%
	Summer (April-July)	54%

CONCLUSIONS

Tests can either be carried out frequently and regularly or infrequently at random. The latter method, relying on the element of surprise would appear to have several advantages. The main conclusion of this trial is that it is both possible and practical to obtain random samples of urine from active athletes in training with the element of surprise, during their every day life, throughout the country. The time interval between initial contact and collection averaged about 12 hours and is well within the 24 hours considered necessary to eliminate anabolic steroids by forced diuresis.

The wide choice of collectors functioned co-operatively and efficiently with the written instructions. There was no apparent difference in co-operation between doctors and nurses or between motivated "sports orientated" collectors and with those who had no apparent or close connection with sport.

The method of transporting the specimens by 1st class post proved that the glass containers, suitably wrapped in Jiffy bags and boxed, travelled well, and arrived promptly and fresh at the collecting centre.

DISCUSSION

Failure to collect Out of the 28 athletes 20 were tested on three or more occasions. It would be reasonable to assume that, with this frequency and the surprise element, none of these athletes would have been using anabolic steroids or other banned drugs. Although, for the same reasoning, the remaining eight athletes, tested less frequently, would almost certainly not have risked using drugs, it would have been preferable for them to have had more tests. It would, therefore, be pertinent to analyse why these eight were tested less often.

At the start of the trial, three athletes were included who stated that they would be out of the U.K. for varying periods, training and competing in warmer countries during the U.K. winter. These were included in the trial with the hope of being able to arrange testing while they were away. Regrettably time prevented this from being done, and so three athletes missed at least two random tests each whilst they were away. There was no problem doing random tests on these individuals when they were in the U.K., and for the purpose of the record, it can be stated that, whilst in the U.K., their testing was perfectly adequate.

Overall the following causes of failure to collect were identified:

- (i) Collector failed once to make contact and omitted to try again.
- (ii) Athlete failed to notify temporary or permanent absence from his given location.
- (iii) Collector failed to make an attempt to collect at all (too busy, on holiday, forgot, etc.)
- (iv) Collecting boxes failed to arrive. (Mainly in large industrial organisations)
- (v) Athlete totally uncontactable at given location.
- (vi) Athlete moved in the last stages of the trial and it was not considered appropriate to set up a new collecting pattern in the new area for just a single collection.

With the exception of (vi), all the above factors occurred in the five remaining athletes where the failure rate was unacceptably high. In the context of this trial, that is, using voluntary athletes and collectors, no attempt was made to put pressure where failures did occur to improve the collection rate, nor any attempt to omit from the "register" where no contact was made. (See appendix B).

The overall failure rate was considerably higher during the outdoor athletic season (April-July 54%) than during the winter period (Nov.-Mar. 14%). The main reasons for the high failure rate during the summer were:

- (1) Athletes competing away from home.
- (2) Collectors' holidays.

It must be concluded from this that in any future random spot testing the home/work collecting environment must be supplemented by increased spot testing at minor athletic events in the summer. For this purpose the athlete would be required to notify, in advance, the likely events and locations in which participation was anticipated at the beginning of the outdoor athletic season.

Choice of Collectors and co-operation Where possible, the already existing Medical services were used. In the case of the female athletes the Health Visitor Service proved very efficient and co-operative. In general Industrial Medical Centres were equally co-operative, although lost collecting boxes were all sent to places of work. Athletes' clinics, Students' clinics at Universities and special departments at Teaching Hospitals were all very satisfactory. Where there was no obvious local existing service, medically qualified members of the British Association of Sport and Medicine could often be found, usually the Medical Officer of the local Soccer or Rugby clubs. General practitioners with whom the athlete was registered were also used and were efficient and obliging.

By and large there did not seem to be any difference between any of the different categories of collectors in co-operation or failure rates. There was no significant difference between male and female athletes, either in their co-operation or availability.

The use of many different collectors was deliberate in order to test out the various possibilities and combinations. In any future random spot testing scheme it would be considerably more efficient to have fewer collectors, each responsible for several athletes, as where one person collected from a large area there was 100% success. It would seem logical, therefore, and assist in reducing the collection failure rate, if collection were to be done on a regional basis by a mobile collector, working in areas of higher population density. More distant rural or isolated athletes could be collected by a local collector, augmented from time to time by the nearest regional collector. From the experience of this trial, it would appear that there is no lack of willing and efficient collectors, and any future random spot testing scheme should not lack for want of suitable collectors.

Location of Collectors The location of the collection was very much a matter between the collector and the athlete. All locations used appeared to be satisfactory. A mobile regional collector would need to depend upon meeting the athlete at a suitable collecting venue. There was no problem found in doing this during the

Comment from Prof. Arnold Beckett, PhD, DSc, FPS

The 12-24 hours maximum delay in collecting specimens is well within the clearance time of amphetamines and other stimulants. Diuretics by diluting the concentration of drugs, will only have a slight shortening effect, but not enough to be significant. Anabolic steroids, of course, have a much longer clearing time.

trial at homes or places of work and this should present no difficulty. Alternatively the collector could travel in a van-type vehicle, equipped with appropriate private collecting facilities within.

Mechanism of Collection There was some criticism of the method of sealing the Jiffy bags containing the specimens, and a few burned fingers resulted from misplaced molten wax. The simplest method evolved was to staple the folded entrance to the Jiffy bag, then to drip the wax from a wicked sealing wax bar, before making the seal; a little crude and maybe consideration could be given to finding a less cumbersome method in the future.

Not all the collectors followed precisely the procedure for sealing the Jiffy bags. It is, of course, in the athlete's own interest to ensure that the procedure is carried out properly, as this protects the athlete in the case of query later.

Overseas Athletes The trend for U.K. athletes to migrate with the sun during the Northern winter is likely to increase. It was perhaps a little ambitious to include such athletes in this preliminary trial. However, with improved world wide communications, intercontinental testing should not present any insurmountable problems, especially as any further development of random spot testing could only be considered with full international co-operation — see below.

SPECULATION

Random spot testing in training and at the competitive events would seem to be the most efficient method of deterring the use of banned drugs to influence sports training. With the advent shortly of suitable means of detecting the use of exogenous Testosterone, it would seem that the basic requirements for coming to terms with drug abuse in training are available. Any action taken by one country must be matched by equivalent action by all other participating countries. It is therefore necessary that, in order to achieve a drug-free international sports scene, all participating countries set up their own domestic random spot testing organisations. Furthermore it would be essential for world sporting federations to arrange international monitoring of these internal organisations, without let or hindrance, to ensure that the internal spot testing was being conducted properly according to the predetermined regulations. Only world wide checking and cross checking in this manner can hope to deter the use of drugs in sports training.

This trial was conducted on behalf of the International Athletics Club of Great Britain and Northern Ireland with financial help of Ciba Geigy Ltd. and the Sports Council.

APPENDIX A

VOLUNTEERING STATEMENT

I, the undersigned, do hereby volunteer to make myself available for random spot tests of urine during the period commencing 1st October, 1979 to 30th September, 1980. I accept the conditions for testing as set out in the attached scheme for voluntary spot testing for drugs which can influence sports training. I agree to be ordinarily available for spot testing at the following locations:—

Location	FULL Address and Tel. No. (CAPITALS)	Times
1. Home		Periods to
2. Place of Work		to
3. Place of Training		to
4. Any Other		to

Name and address of General Practitioner

(This is necessary to identify the Health Visitor who has a responsibility to you).

I understand that I must notify the Central Organiser at 467, Lytham Road, Blackpool, Lancs. Tel. Blackpool 45086, if my location or time periods alter, at once.

I ordinarily take the following medication prescribed by my own Doctor (To include the Contraceptive Pill. This information is strictly confidential).

I understand that I will be eliminated from the scheme if any of my tests prove positive for drugs as indicated in the Rules and Regulations. I understand that I will be eliminated from the Scheme if reasonable attempts to obtain a specimen for testing from me have been carried out and failed as in the Rules and Regulations. I understand that I may withdraw without obligation at any time.

I wish an explanatory notification of the scheme to be sent to my *Employer/School or College (*Delete if not required).

Signature

APPENDIX B

REGULATIONS

1. Testing of Specimens

This is to be done by the Department of Pharmacy at the Chelsea College, Manresa Road, London. Testing is to be for all banned drugs.

2. Regulations Concerning Prescribed Drugs for Health Reasons

Athletes must state to the Collector any additional medication (including Contraceptive Pill) that they may be taking at the time of the test. This must include simple "cold" remedies and pain relievers, even those obtained without Doctors prescription. If that medication includes any of the aforementioned drugs which the athlete claims are being taken for therapeutic purposes the athletes must produce full medical evidence from the prescribing Doctor. The athlete in this case must also be prepared to submit to full examination by a Tribunal of Specialist Doctors in the alleged condition. Should the Tribunal decide that the condition does not exist or that the drug taken is not normal, recognised treatment, the athlete would not be able to take part or continue in the pilot scheme.

3. Regulations Concerning Collection

The athletes are to state one or more locations and times at which they would ordinarily on a regular basis be available at or could attend to, for the purpose of spot testing (suggested places — home, place of work or training, clinics, etc.)

4. Notification of Date of Collection

Central Control will inform the appropriate Collector in the athlete's own area of when a test is due. The Collector will then select the earliest convenient date for the collection and will contact the athlete by telephone, personally or by written notification at the athlete's stated venue. The specimen could be made forthwith or at the earliest time during the ensuing 24 hours but not later than 24 hours from the time of initial contact.

5. Failure to Contact

If the Collector fails to contact either by telephone or after hand delivered written notice or recorded delivery 1st class post on a selected date for the test, the Central Organiser is to be notified at once. The Central Organiser will then send a written communication to the usual address informing the athlete of that failure. The Central Organiser will then arrange for a further date to be selected. After three such failures to contact without appeal, the athlete will be eliminated from the register.

6. Right of Appeal

(a) The athlete has the right to appeal to the Central Organiser regarding the circumstances for not being present for spot testing. The appeal must be received in writing within eight days of the athlete being given written notice that a failure to contact has been reported. Providing the Central Organiser is satisfied that the reason given is genuine, and there is written confirmatory evidence by a third party, the Central Organiser has the right to waive that particular failure to be present. In this case a further spot test will be arranged and the balance of the three allowable failures for spot testing be restored. The Central Organiser has the right to disallow the appeal if the reason is not satisfactory or he may refer the appeal to the Appeals Tribunal, whose judgement would be final. After the third failure to contact, any appeal must be dealt with by a Tribunal. The only exception to this is on the grounds of ill health, where a full medical report must be obtained from the treating Doctor. The athlete would have the right to be represented at the Tribunal by a third party of his or her choice (parent, friend, coach or legal adviser). The decision of the Tribunal is to be final.

(b) On a test being proved positive, the athlete has the right to appeal to the Central Organiser within 8 days in writing to have the second specimen open in his/her (or representative's) presence and for the testing to be witnessed at the Chelsea College.

7. Setting Up A Tribunal

The Appeals Tribunal is to be nominated by the chairman of the I.A.C. or his nominated deputy from the Executive Committee in his absence. It is suggested that the Tribunal is to consist of any three members of the I.A.C. comprising at least one currently active athlete and one non-participating ex-athlete. The members should have no direct connection with the appellant, i.e. coach, or known close friendship. At least two of the Tribunal shall be from a differing event to the appellant. The Chairman of the I.A.C. shall nominate one member of the Tribunal as Chairman of the Tribunal. The Chairman of the I.A.C. shall appoint the Tribunal within fourteen days of the appeal being made. The Tribunal is to meet as soon as possible to hear the appeal at a convenient location to all concerned, nominated by the Chair-

man of the I.A.C. The appellant shall be notified of the decision of the Tribunal by the Central Organiser using first class post to his usual place of residence at the earliest date following the Tribunal.

8. *Change of Location or Time Period*

The athlete is required to give reasonable notice of any change in location or time in writing to the Central Control. Notice by word of mouth **WILL ONLY BE ACCEPTED IF CONFIRMED IN WRITING WITHIN SEVEN DAYS.**

9. *Elimination from the Scheme*

This would occur should any of the tests prove positive for banned drugs or diuretics, or should the athlete fail to be available for spot testing after three attempts to locate have been made as above.

When the test is complete, the Chelsea College will inform the Central Organiser. The Central Organiser will in turn inform the athlete only in the event of a positive result. In this case the athlete would have the right to appeal to have the second specimen tested. This appeal must be received in writing within eight days of the notification of a positive test was posted. The notification of a positive test or elimination due to three failures to be present is to be posted by recorded delivery.

10. *Method of Collecting Specimens*

Testing is to be carried out on urine voided under the following circumstances:—

The athlete is to produce a specimen of urine into a sterile container. The specimen will then be split into two equal parts in two small containers by the Collector in front of the athlete. Both specimens will be sealed before being sent or taken to the Chelsea College. This second specimen is to be used for testing should there be any doubt, spillage or dispute regarding the first specimen. Should it become necessary for this second specimen to be tested, the athlete or his nominated representative may witness the details of opening and testing at the Chelsea College.

11. *Details of Collection*

- (a) The room in which the specimen is to be produced is to be inspected by the Collector to ensure that no false specimen could be secreted inside the room prior to the test.
- (b) The Collector must check that the individual corresponds to the person identified on the Identification Card.
- (c) The athlete should be wearing competitive type singlet and shorts or normal light clothing, and should be frisked to ensure that no specimens are secreted about the body.
- (d) The athlete is to be given one sterile container and requested to produce a fresh specimen into this container in the already inspected room with the Collector waiting outside.
- (e) Upon receiving the specimen, the Collector will proceed to divide the specimen into two equal parts in a further two sterile containers in the presence of the athlete, and sealed. These specimens are to be labelled clearly and signed with the name of the athlete, the name of the Collector, date, time and location.
- (f) Both specimens are to be sent to the College, one to be tested upon receipt, the second is to be used in case of spillage, doubt or dispute about the first. Once the first specimen has been tested to the satisfaction of all parties, the second specimen can be discarded.
- (g) Should the Collector have any doubt about the exact origin of the specimen, in that it is suspected that despite the inspection of the room, a false specimen could have been secreted and placed into the first container, the

Collector has the option to change the room or location of the test altogether to ensure that no substitution is made.

- (h) After completing a collection (or failed collection), the Collector is to notify the Central Control of the outcome of the test and at the same time return the identification slip.

APPENDIX C

INTERNATIONAL ATHLETICS CLUB SCHEME FOR RANDOM SPOT TESTING OF URINE SAMPLES FOR DRUGS DURING TRAINING INSTRUCTIONS TO COLLECTORS

Because it is possible to eliminate oral anabolic steroids from the body rapidly, it is unfortunately necessary to give athletes minimal warning of an impending test. For this reason it is essential that the sample be collected not longer than 24 hours from the time of contact to arrange the collection, and as soon as possible during the period of 24 hours from that contact.

It has been known for athletes to adopt devious means of avoiding giving a true sample of their urine or to use delaying tactics to allow more time for drugs to be eliminated. It is therefore essential in the collection of specimens that a strict routine is followed in order to reduce the likelihood of cheating. At the same time this should increase the confidence of the athletes in the procedure, as some have found such sampling irksome and distasteful, especially if they feel that the collection is open to abuse.

NOTIFICATION OF IMPENDING TEST

It is envisaged that each athlete will be tested on about six occasions during the training period each year — 3 during the winter period and 3 during the outdoor season.

Names will be selected by the Central Control on a random basis. The collector for each athlete will be informed by post when a test is due to be done. At the same time the sampling bottles will be sent to the Collector. The Collector will then choose a convenient day within the next 2 weeks to contact the athlete concerned to arrange for the test to be done. This contact is preferably done by telephone either directly or by leaving a message with a reliable third party. The sampling must now take place within 24 hours of this contact being made.

FAILURE TO CONTACT: Please see accompanying rule.

VENUE

The location of the sampling can be left somewhat open to arrangement between the collector and the athlete. It is anticipated that such venues as the athlete's home or place of work or training would be suitable. It may be more convenient to use the collector's home, a local authority site, or any other convenient venue, the important features being to ensure convenience for both parties and the absolute integrity of the sampling within the time limit after the initial contact. If contact is made by post this should be 1st Class scheduled to arrive first post the following day. In this case it should be the aim to do the sampling during that day.

OBTAINING THE SAMPLE

Please see accompanying rules. See paragraphs 16 and 17.

CARRIAGE TO CHELSEA COLLEGE

The current method used to send the specimens to the Chelsea College is by Red Star rail, the sender informing the college that the specimen has been sent. Where possible it will be best to follow this routine. It may however be easier in many cases to use parcel post. It is this type of thing which this pilot scheme will be able to experiment with to devise the best method under each circumstance.

APPENDIX D

Enclosed in this package are:—

1. 2 specimen jars in jiffy bags.
2. Sealing wax.
3. I.A.C. Stamp for marking Please retain for further use.
soft wax.

4. Postage stamps.
5. Gummed tape.
6. 2 Address labels — Chelsea College.
7. Name and Addresses (Telephone Number) of athlete to be spot tested.
8. Identification form and photograph of the athlete concerned.
9. Report on completion of the test.
10. Stamped Addressed envelope for the return of items 8 and 9 following the test.
11. Letter of notification to the athlete.
12. Form for Chelsea College.

OBITUARY**Dr. Frederick Harold Lee, FRCGP, MB, BS, MRCS, LRCP**

The death of Dr. F. H. Lee on January 24th, 1981, at the age of 78, leaves the ranks of our founder members even more sparse. He was born in Leicestershire, educated at Bromsgrove School, Worcestershire, and Guy's Hospital, obtaining the Conjoint Diploma in 1935 and the London MB, BS in 1940. He entered general practice in Long Eaton, and was a founder member of the College of General Practitioners, being elected FRCGP in 1967. He was medical officer to Trent College, and an active member of the Medical Officers of Schools Association. With the establishment of the University Department of Community Health at Nottingham, he was appointed a part-time lecturer, and he kept up an active research interest in epidemiology. He attended several BASM meetings held at Loughborough in the 1960s, but resigned from the Association in 1973, several years after reaching retiring age. We extend our sympathy to his family, and know that he will also be missed by those longstanding members of BASM and MOSA with whom he has been associated for so many years.

H. E. Robson