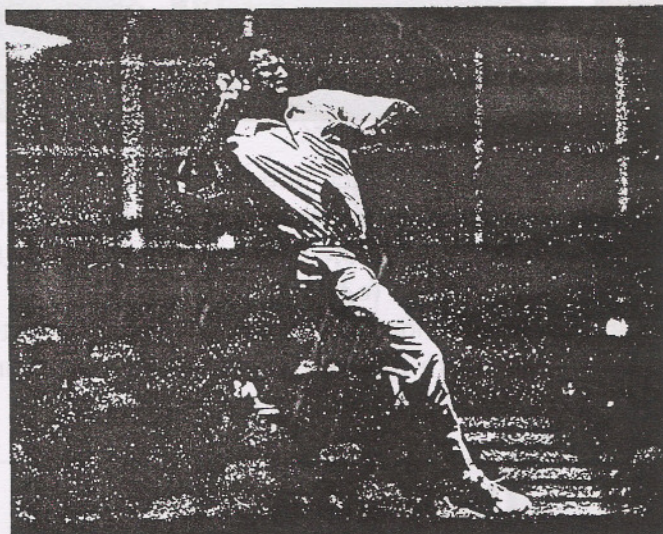


# 3

# BOWLING



With basic coaching anyone can develop a satisfactory degree of control when bowling. The old adage that bowlers win matches may well be true – this is most common in junior matches where technique and concentration on the batter's part are less developed. As bowlers progress through the ranks however, they quickly discover that both the wicket and the batters are better prepared. It is important then, that the coach instills in the bowler the desire to experiment and

learn new deliveries to capture wickets. The best place for this is in the nets where a particular delivery can be worked on consistently. As coaches we should urge our players to develop and maintain quality at practice. Good batters develop against good bowling and vice-versa; hence we must encourage all members of the team to improve their control of line and length regardless of the type of bowler they are. Success here will lead to greater enjoyment and effort.

# Learning to Bowl

## KEY POINTS

### CONCENTRATION

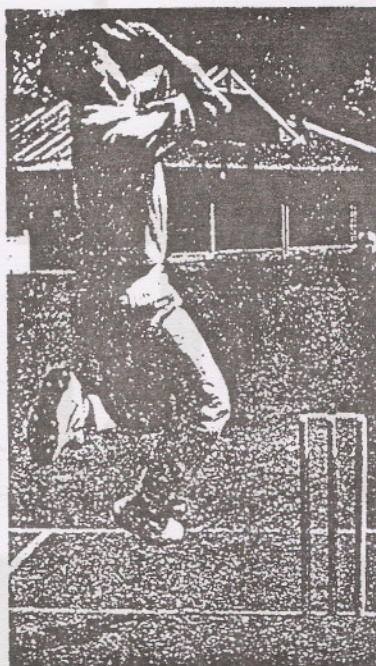
- Focus on the line to bowl

### ALIGNMENT

- Keep the arms in close to body during run-up
- Be in posture (hips and shoulders in the same plane) at back foot landing
- Be balanced, keep the head high and steady, with eyes level throughout

### POWER

- Accelerate gradually in the run-up
- Jump into the delivery stride
- Pull the front arm strongly down the target line and keep the elbow close to the body
- Rotate the arms and shoulders as vertically as possible towards target

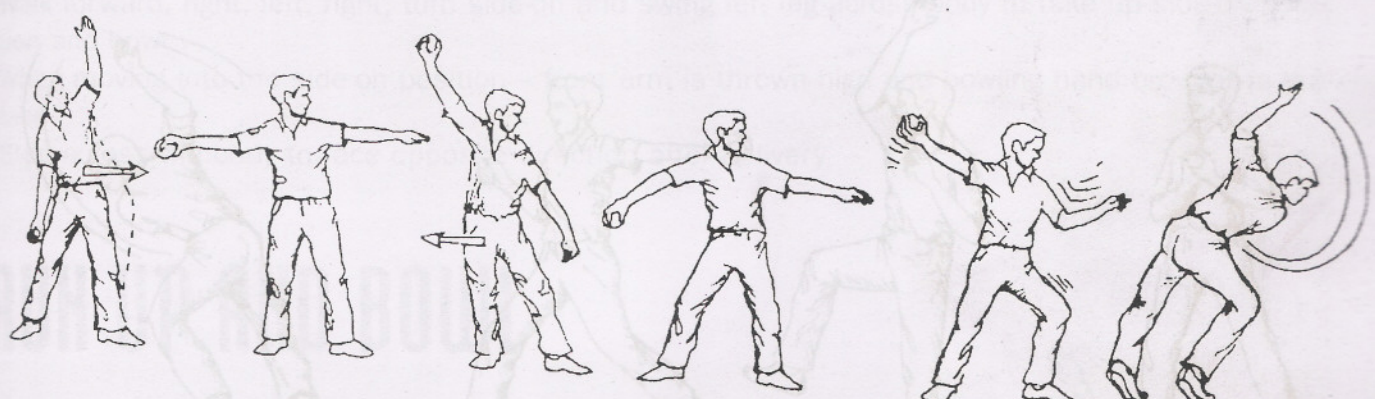
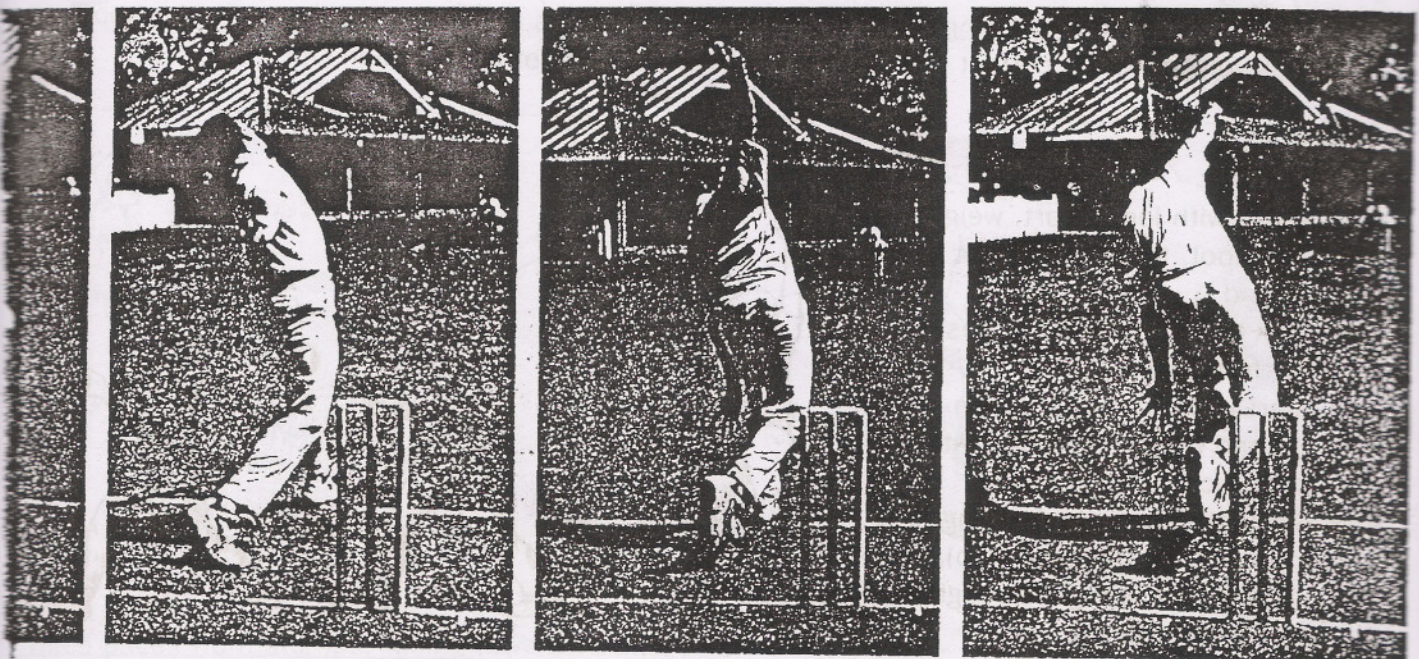


Firstly, the coach needs to identify the correct bowling arm through a variety of rolling/throwing games. Note those who throw off the same foot as their throwing arm (e.g. right foot/right arm) and remedy the error (e.g. left/right).

After demonstrating the basic grip (first two fingers slightly apart on the seam with the thumb on the seam under the ball), the following activities can be used to build a bowling action and run-up.

## The Basic Grip





## Rock and Bowl - Position

- Stand side-on with feet, shoulder distance apart
- Front-arm high and bowling hand beside the back leg
- Feet, hips and shoulders in line and pointing at batter
- Head level and turned to look at batter behind the front arm

## Rock and Roll - Action

- Rock weight onto front foot then back foot (twice)
- Arms rotate 180° in time with transfer of weight
- Ball is bowled on third rock forward – front arm pulls down past left hip with bowling arm following across body

## KEY POINTS

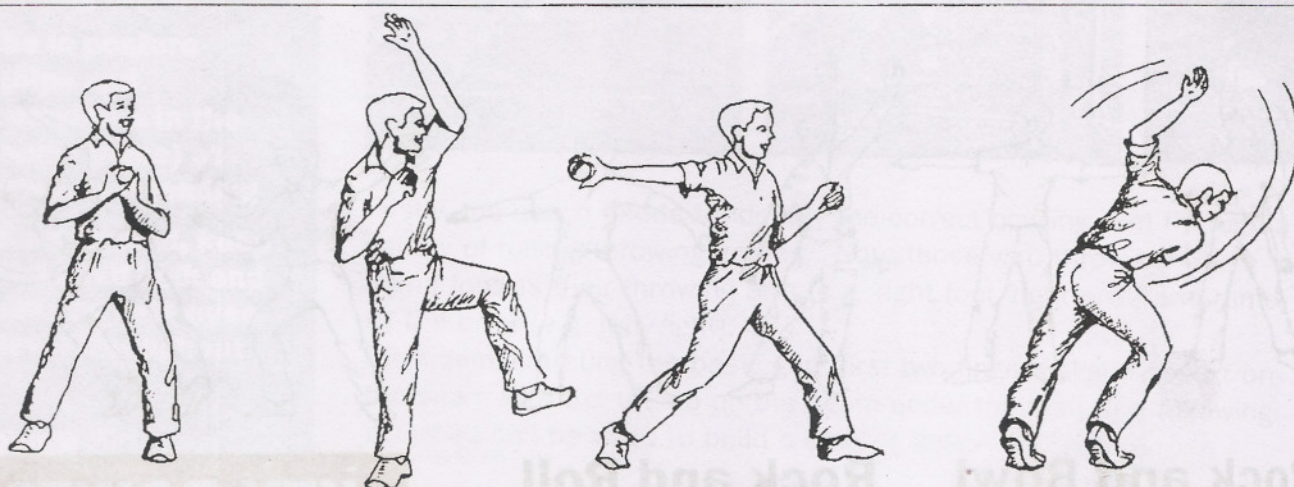
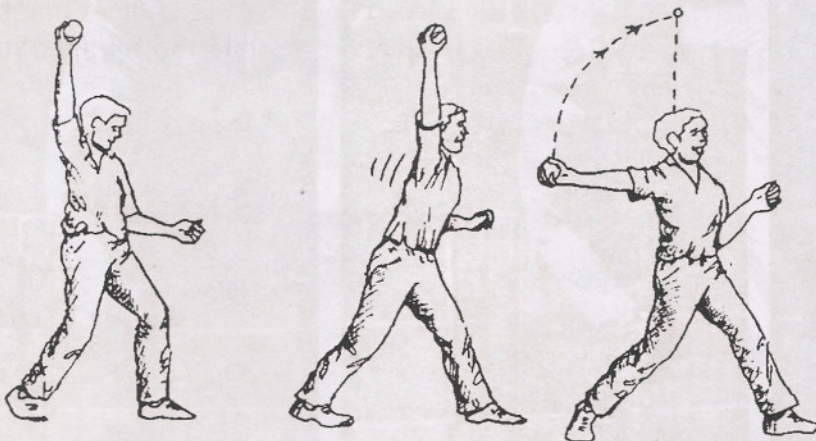
- **Keep head steady and eyes level**
- **Transfer weight**
- **Pull front arm down strongly towards hip**
- **Bowling arm should brush ear and then follow through across body**

# BUILDING AN ACTION

After the technique of releasing the ball with a straight arm is mastered, the young bowler should progressively learn the correct lever sequence to develop an efficient action.

## Wrist

- Stand with legs apart, weight on front foot, toe of back foot on the ground
- Tuck the front elbow in beside the front hip
- Start with the bowling arm vertical and release the ball with a wrist flick
- Gradually lower the bowling arm to horizontal (step by step), keeping the arm straight through the swing and release



## Gather and Explode

- Stand with feet together. Hands in against the chest
- Lift the front knee up close to the body
- While stepping forward unfold the arms by rotating them in opposite directions
- When the front arm is up high, deliver the ball using the learned lever sequence

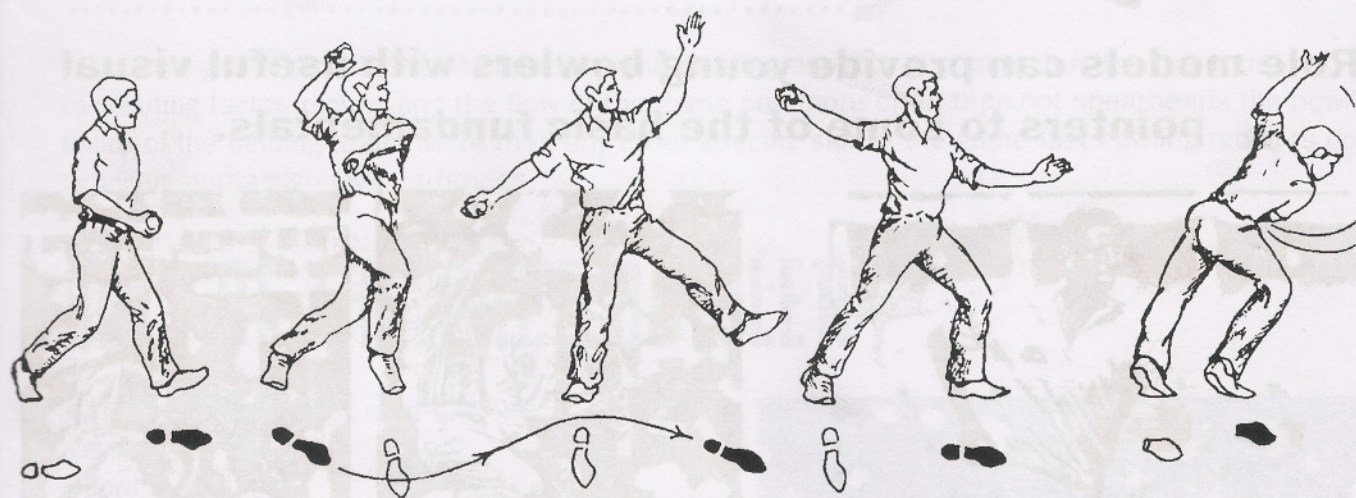
**• IT IS IMPORTANT YOUNG BOWLERS EXPERIENCE THE "FEEL" OF THIS ACTIVITY AS IT CHALLENGES THEIR NATURAL BALANCE AND CO-ORDINATION.**

## Pulling the Chain



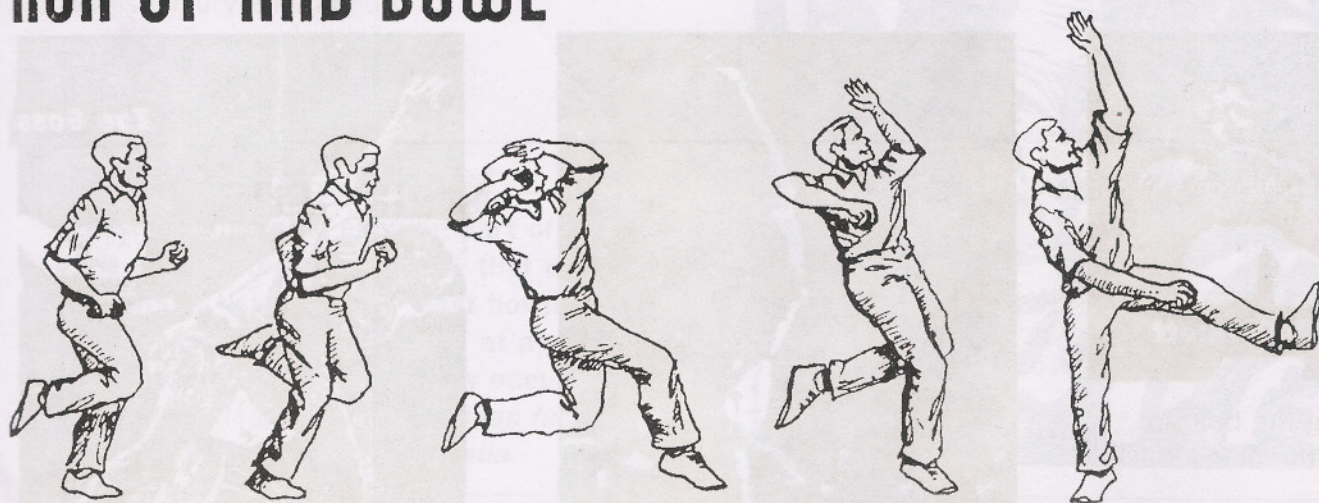
- Stand with legs apart, weight on front foot, toe of back foot on the ground
- Reach for the sky with front arm, side-on, look at target behind front elbow, ball held next to back knee
- "Pull the chain" with the front elbow into the hip, catapulting the ball around through release
- Return to standing with weight on back foot, transferring to front foot, "pulling the chain" and releasing the ball
- Follow through with step and full body rotation

# WALK UP AND BOWL



- Three paces from stumps, facing towards batter
- Walk forward, right, left, right, turn side-on and swing left leg across body to take up side-on position and bowl
- When moving into the side-on position – front arm is thrown high and bowling hand brought to the face
- Step across the body to face opposite direction after delivery

# RUN UP AND BOWL



- Gradually build pace and distance into run-up and delivery ("steam train")
- Measure the run by starting from crease with eyes closed. Run away from pitch and when it "feels right" jump and bowl. Note where the back foot lands, mark the spot and pace out from there to the crease
- Stay in corridor/move through a straight line

# Images

**Role models can provide young bowlers with useful visual pointers to some of the basic fundamentals.**



**Michael Kasprovic**

- Run-up should be gradual – slow at first, building up to top pace just before delivery. Rhythm is vital.



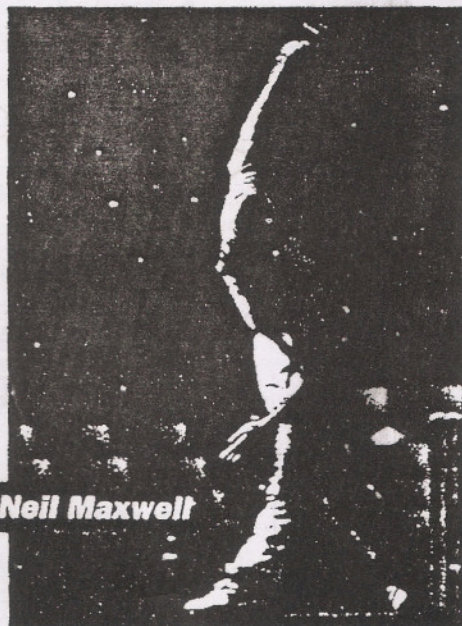
**Paul Reiffel**

- Jump into the delivery stride – land with back foot parallel to the crease for Side-on action.



**Craig McDermott**

- Bring the ball up under the chin.



**Neil Maxwell**

- Pull down hard with the front arm. Brush the ear with the bowling arm when releasing the ball.



**Zoe Goss**

- Follow through hard with a full body rotation.

# Pace Bowling

Pace bowling is one of the most important and exciting aspects of cricket. It is the major or contributing factor in changing the flow of the game and more often than not spearheads the bowling tactics of the fielding team. More than any other specific skill in the game fast bowling requires good technique and a high level of fitness.

## AIMS OF THE PACE BOWLER

- Take wickets through control of pace, swing, line and length
- Bowl to a plan
- Make batters play at as many deliveries as possible

Whilst safety is always of paramount importance a youngster with genuine pace should be encouraged to utilise his ability within strict supervision both at practice and in matches.

As pace bowlers are generally impact bowlers the responsible coach will ensure they retain hunger and freshness by bowling in shorter spells with adequate rest periods. This approach to coaching and player management will also enable them to diminish injury and fatigue.

## INJURY

**"Fast bowling is an exciting part of our game. It is also a strenuous activity that places bowlers at risk to injury. Fast bowlers who try to bowl too fast, for too long, at a young age, increase the chances of injury occurring."**

**– Dennis Lillee, former Australian fast bowler and Head Coach, Pace Australia.**



Injuries in pace bowlers occur as a result of three factors:

- Poor physical preparation
- Overbowling (training/matches)
- Poor technique

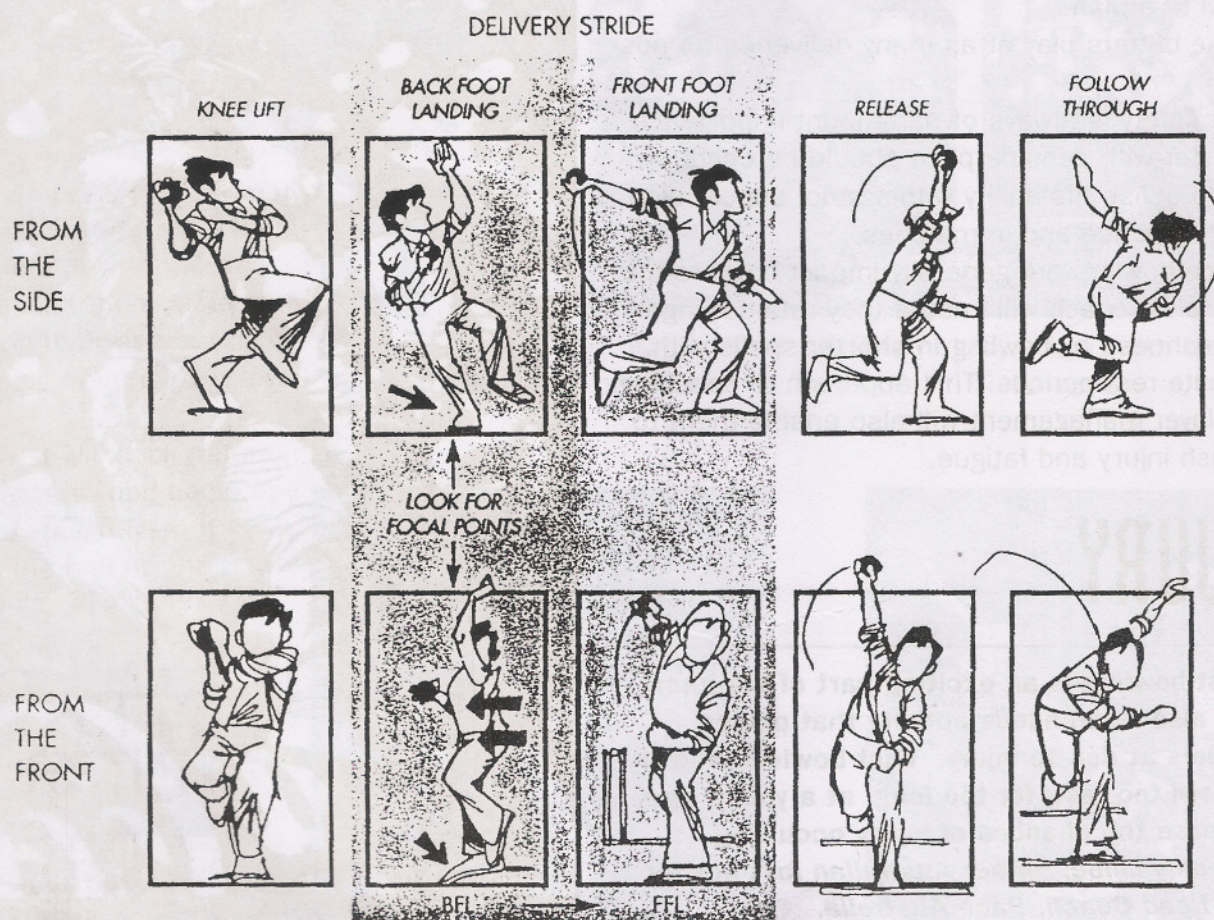
Poor techniques led the Australian Cricket Board's National Coaching Committee to produce a program called SPOT, which should be understood by all coaches before they move on to coaching pace bowlers.

**PLEASE TURN TO PAGE 65**

# The Basic Actions

There are two recommended bowling actions that are considered "safe" – that is, where the hips and shoulders are in alignment and the spine is under the least amount of stress. They are the Side-on action and the Front-on action.

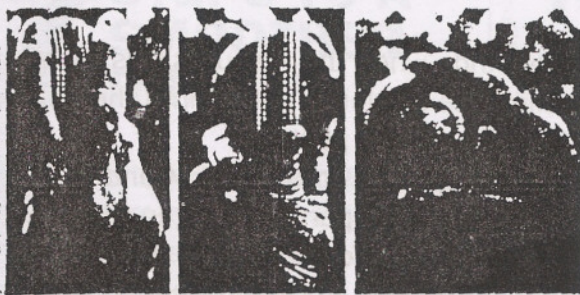
## SIDE-ON



## KEY POINTS

- The back foot parallel to the bowling crease and stumps at back foot landing
- Hips and shoulders pointing down the wicket at the batter
- The bowler is able to look through the extended front arm as the back foot lands

## DON'T FORGET THE GRIP!



- Basic grip with first and second fingers slightly apart on the seam with thumb on the seam under the ball
- Ball is held out in the first two joints of the fingers
- Grip must allow the ball to be released with the seam in upright position

To check the grip, stand the young bowler in front of a mirror. Bring the arm over slowly using the normal

delivery action. Stop the hand at the point of delivery and note the position of the hand and seam. A slight adjustment of the ball in the fingers may be necessary to bring the seam upright at the point of delivery.

## FRONT-ON

### DELIVERY STRIDE

FROM  
THE  
SIDE



FROM  
THE  
FRONT



## KEY POINTS

- Both feet pointing towards the batter at back foot landing
- Hips and shoulder pointing across the pitch
- Bowler able to look inside the extended front arm as the back foot lands

# THE RUN-UP

During the Run-up the head should remain steady with the eyes level. Establish a target line or channel with a target spot e.g. where you want the ball to pitch. Maintain your focus on the target spot, and your body levers moving down the target line.

To gain the most from a Run-up it needs to be comfortable, economical and above all balanced. Young bowlers should be encouraged to utilise their natural running style when approaching the wicket.

The Run-up should gradually increase in speed, smoothly accelerating, until 2-3 steps from the

delivery stride when the Run-up slows marginally to allow the bowler to gather into the delivery position with a safe posture.

During the approach to the wicket and delivery try to keep all body parts moving in the direction of the target. To do this the arms and hands must be kept in close to the body during the approach and delivery. This will ensure bowlers can obtain maximum pace with the most economical action. Keep the arms pumping forward and back with the elbows in during the approach, not swinging across the body. The Run-up should be direct to the wicket.

## RUN UP DRILLS



The following can assist in measuring a bowler's Run-up:

- Bowler starts from set mark. With eyes closed, build momentum and bowl when "ready"



- Partner marks where front foot lands in delivery. Repeat until a consistent mark is found



1<sup>st</sup> MARKER

- Regular walking steps are used to measure the run-up



2<sup>nd</sup> MARKER

# 7 STEPS TO A SMOOTHER RUN-UP

**1** A method of regaining lost rhythm is for the bowler to "point the nose towards the ground more" and concentrate on a balanced running style

**2** The Run-up should be a length which results in the front toe just breaking the popping crease to avoid no balls. When bowling a quicker ball, start a little back from the bowling mark if no balls are a problem

**3** A Run-up that is too slow will lack follow through and will reduce pace. A Run-up that is too fast will make it difficult to get side-on in the delivery stride

**4** Run-ups need to be re-measured as bowlers grow or if no balls persist

**5** Measure the Run-up with the heel on the back of the crease line. Practise getting the pacing correct

**6** Always commence the Run-up from the same foot. Know the number of running steps you take and the rhythmical timing of each step in the sequence

**7** If extreme difficulty is experienced with the Run-up, the coach should note the position of each step during the Run-up when it is made with the eyes closed. Placing a marker at each step will assist the bowler develop rhythm when the eyes are opened.

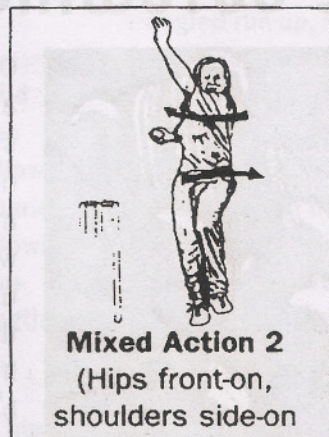
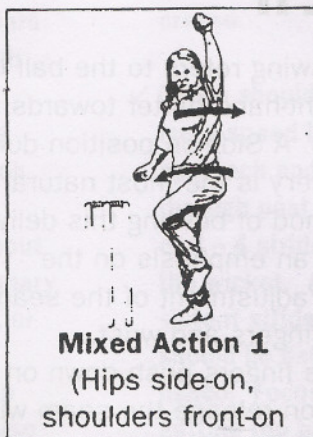
## TECHNIQUE

Whatever the action style it is important to keep the hips and shoulders aligned.

Being out of posture results in a mixed action.

This is where the bowler's hips and shoulders are pointing in different directions at back foot landing.

**A mixed action should be avoided at all costs.**

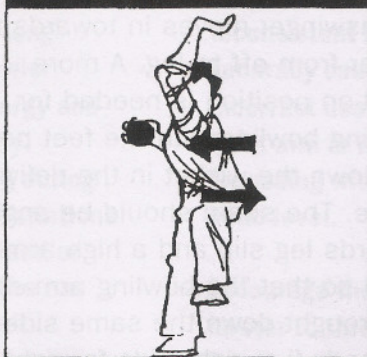


Good posture in other activities and regular life is also important.

The most common mixed action occurs when the upper body is front-on while the lower body is side-on (back foot and hips in Side-on position, shoulders Front-on) at back foot landing.

After back foot landing there are two types of upper body movement which increase the risk of injury to the bowler:

### COUNTER-ROTATION (twisting of the trunk)



This involves the shoulders swinging around from an open position at back foot landing to Side-on, then back to open again to release the ball.

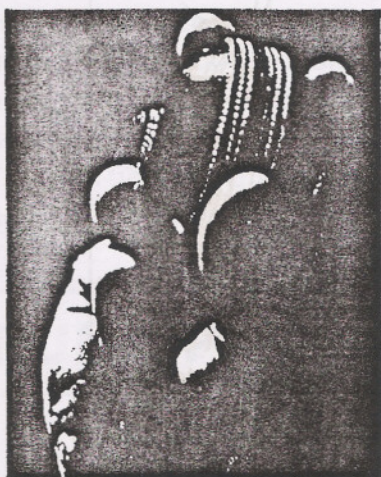
### HYPER-EXTENSION (arching the back)



This unnatural bending puts extra stress on the spine as it is twisted during the bowling action. It occurs when bowlers are striving for extra pace or trying to spin the ball harder than normal.

# Swing Bowling

## THE OUTSWINGER

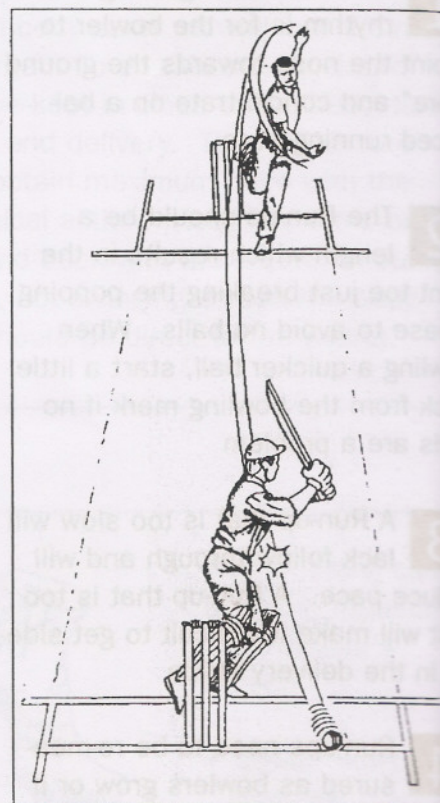


Outswing refers to the ball leaving a right-hand batter towards the slips. A Side-on position during delivery is the most natural method of bowling this delivery with an emphasis on the use/adjustment of the seam by the fingers and wrist.

If the fingers push down on the ball on release the seam will wobble during flight and negate swing. By delaying the wrist action and using the fingers like the bristles

of a paint brush the seam will remain upright during flight and the ball will swing.

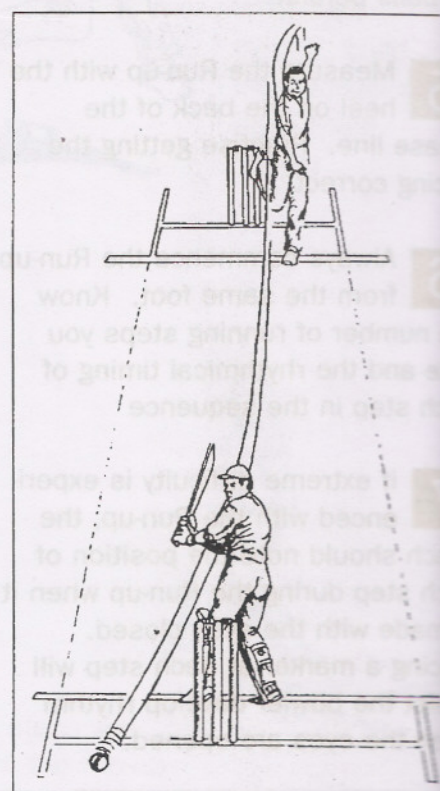
At the point of release the bowling arm should be high but not brushing the ear. The follow-through should be strong and across the body.



## THE INSWINGER



An inswinger moves in towards the batter from off to leg. A more Front-on position is needed for inswing bowling with the feet pointing down the wicket in the delivery stride. The seam should be angled towards leg slip and a high arm used so that the bowling arm can be brought down the same side of the body (i.e. right side for right-arm bowler). Pull down on the seam to keep it upright.



## COMMON ERRORS, DETECTION & CORRECTION

### KEY POINTS

#### (Outswing)

- Point seam towards first/second slip (to right-hand batters)
- Release ball off index and second finger
- Position shiny side of ball to leg side (to right-hand batter)
- Follow through across the body

### KEY POINTS

#### (Inswing)

- Point seam towards fine leg
- Release ball off middle finger
- Point thumb towards batter
- Position shiny side of ball to off side (to right-hand batter)
- Follow through down side of body

Bowls too short  
X usually caused by a collapse of the front leg in delivery or from dropping the head.

- ✓ Encourage bowlers to develop a high arm action and braced front leg while focusing on the base of the stumps throughout delivery. Stationary, stand and bowl, or reduced run-up bowling will help here, as the cause may simply be a late or delayed ball release.

Seam not upright  
X Results from incorrect grip or movement sideways of the wrist at the moment of delivery.

Run-up too long  
X Leads to bowler wasting energy and not gradually accelerating during approach. Variations in run-up speed or stutters in the run usually result.

- ✓ Coach should reinforce the method for establishing a run-up – markers or verbal cues for various stages of the run-up.

Lack of follow through

X Results from bowlers not gathering enough speed during the run-up or from propping at the crease.

- ✓ Coach should build more speed in the approach and follow through past a marker 3 – 4 strides down the wicket. A consistent stride length should be established. Focus on getting the back hip up and over to increase the follow through.

✓ A cue for the young bowler is the palm of the hand should point in the direction of the intended swing at release.

Inconsistent line

X Generally caused by incorrect use of the front arm or not focussing with the head level.

- ✓ Encourage the young bowler to throw the front arm down the target channel to set up the correct line of the bowling arm. Markers placed as a channel in line with the off stump as a target will be useful.

Falling away in the delivery

X The position of the front foot is the most likely cause but it could be a combination of angled run-up, head not level, collapsing into the back knee, front arm being pulled out rather than down to the hip, not side-on in delivery, the front foot pointing toward gully rather than leg slip.

- ✓ Video the bowling action to determine the major cause.

Angled run to the wicket

X Usually leads to bowlers falling away in delivery or running on the wicket. Young bowlers usually angle the run to get into a side-on position. This is best achieved by a faster approach and higher jump into the delivery.

- ✓ Coach should place markers in a more direct line to the stumps as a path for the bowler's approach.

# Seam, Cut & Variations

The skills involved in cutting the ball are different from swinging the ball and more closely aligned to spin bowling. As bowling Leg cutters and Off cutters is difficult to learn, much work must be done in the nets.

The coach must be aware that these should not be overpractised to the detriment of the swing bowling technique.

Practice sessions should always conclude with work on the "stock ball" so that it develops into a "natural" delivery for the bowler.

Cutters are more effective when bowled on softer or crumbling wickets which will help the ball deviate more.

Different bowlers use various methods to bowl cutters, hence young bowlers should experiment to determine which method or grip suits them.

Because young bowlers often have trouble altering their grip due to small hands, it may be better for them to keep the fingers closer together when cutting the ball.



## THE OFF CUTTER

- In effect this ball is a fast off break
- The first finger does the work
- Bowled with an Outswing action

The first finger is placed down and along the inside of the seam with the second finger spread wider on the leather. The ball is held further back in the fingers than for the Outswinger. At the point of delivery, the wrist is brought down towards backward square leg

## THE LEG CUTTER

- Similar to a fast leg break
- The first two fingers do the work, particularly the middle finger
- At the point of delivery the wrist and fingers are brought down the off side of the ball

# SLOWER, QUICKER BALLS

Subtle variations in pace should be developed to increase the bowler's effectiveness on all types of wickets, especially those which tend to favour the batter.

Slower balls can be bowled in a variety of ways. Methods include gripping the ball in the palm of the hand, "knuckle" balls, the Merv Hughes "leg spinner", half grip ball and one where the

ball is held back further in the fingers with the wrist moving as if you were bowling an off cutter.

The easiest and most subtle way to bowl a quicker ball is to develop a "flick of the wrist" at delivery similar to that used when throwing. More aggression with the front arm will also produce a quicker delivery.



## TIPS ON USING VARIATIONS

When using variations, remember:

- Yes, variety is important – but don't overdo it
- Master your stock ball – and base your attack around it
- Subtle variation has more chance of dismissing a good batter than an obvious change
- A deviation of only half a bat width is enough to produce an edged shot
- Tactical variations can also reap rewards (e.g. a change in the field)
- As the ball gets older, the shine on the ball needs to be preserved. Wet one side of the ball using perspiration or saliva, allow it to dry, then polish it vigorously on that side. Keep the seam clean and pay particular attention to the shine close to the seam
- Bowling into a breeze increases the swing of the ball. Faster bowlers may prefer to have the breeze behind them. A breeze from the leg side assists an outswinger; a breeze from the off side assists an inswinger
- Swing bowlers should keep the ball up, enticing front foot drives
- An upright seam maximises swing and produces unpredictable variation off the stitch (seaming)

# Spin Bowling



Whilst spin bowling is only one facet of cricket, it is arguably one of the most important and contentious. In the past, the scoring of runs pre-determined the use of spin bowlers resulting in tactics that became increasingly conservative and frugal. Spinners were coached to "bowl tight" and were selected accord-

ingly. The emergence of Shane Warne has transformed the philosophy of spin bowling around the world and altered the tactics and

selection of national and first-class teams. It is a healthy aim for cricket coaches to encourage spinners back into the game at all levels and provide long term support programmes for coaches and selectors to ensure these key players reach their potential. The first and most important consideration for the coach of the young spinner is the understanding that each bowler is different ... be it grip, method, ability to spin the ball, speed, air trajectory etc. What is paramount is effectiveness against competent batters. Therefore in assessing the potential of young spinners, the coach must have an eye to the future, for it is a fact that young batters play spinners poorly and statistics in junior cricket can often provide an inflated profile of a bowler.

## KEY POINTS

**Spin** is very important. Young bowlers, both off and leg spinners, will have a tendency to "roll" the ball out because their fingers are not strong enough to give it a real "tweak", and also because they will achieve greater control with the ball further back in the palm of their hand and not in the end of their fingers.

As will be explained later, Spin is the way bowlers achieve Loop.

**Length** is the variable that coaches must be very aware of. Young batters have great difficulty playing any delivery above eye level and as a result are different players when facing spinners, so young bowlers snare many wickets simply because they throw the ball into the air, with little spin, loop or body rotation.

When transposed to more sophisticated cricket, this method achieves little success because batters can use their feet and get to the ball on the full.

Length is also the difference between Loop and Lob.

**Rotation** (of the body) represents the part of the spinner's bowling action that will enable him to achieve "loop" and pace off the pitch. Because of the aforementioned weakness in junior batters, zip and loop are not often needed to secure wickets; but on pitches less conducive to spin against batters prepared to change the length by moving into the ball, a strong body action is necessary to achieve consistent success at the higher level.

# The Deliveries

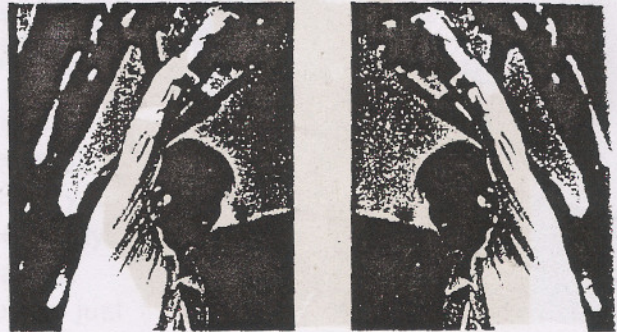
Two types of spinners have evolved over the history of cricket

## THE FINGER SPINNER

Also known as the Orthodox Spinner, he relies on his index finger to spin the ball. Right-arm bowlers spin the ball from the off to the leg and are known as Off Spinners.

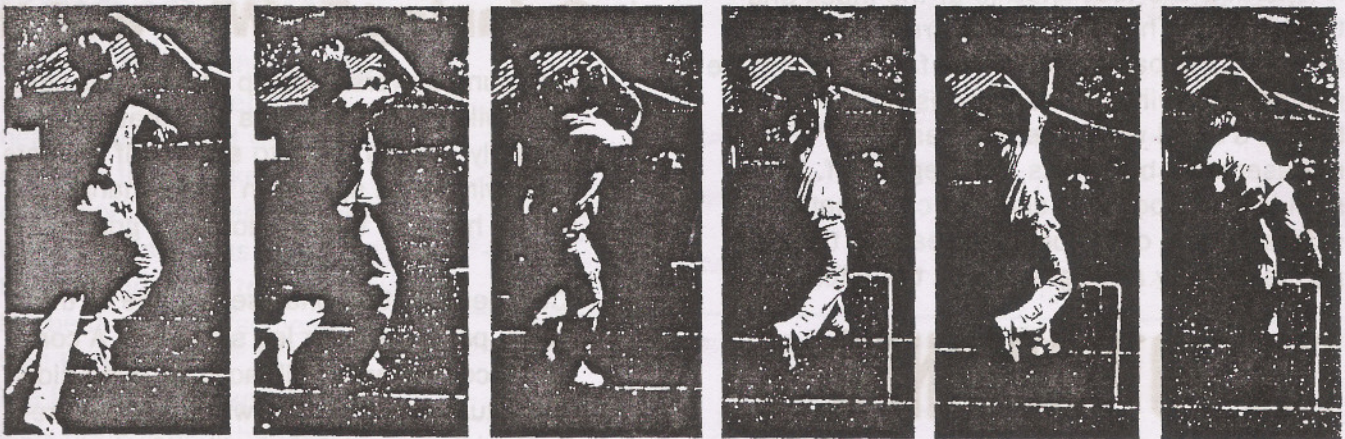
Left-arm bowlers spin from the leg side to the off side (to the right-hand batter) and are referred to as Left-arm Orthodox Spinners

The other type of spin bowler uses his wrist more than his fingers to spin the ball.



The simplest illustration of left-arm spinners is to observe a mirror-image of their right-arm counterparts.

## THE WRIST SPINNER



Right-arm wrist spinners turn the ball from the leg to the off side and are known as Leg Spinners.

Left-arm wrist spinners are referred to as Chinaman bowlers and turn the ball from the off to the leg side (to a right-hand batter).

The grips and mechanics of delivery for wrist spinners and orthodox spinners is very different although their methods and tactics are very similar.



# The Grips



## THE LEG BREAK

The leg spin grip has the seam of the ball in the index, second and third finger, and the ball is spun off the first knuckle of the index and third finger. The ball is very firmly in the fingers and the back of the hand faces the inside just before delivery and finishes up facing the bowler's head when the ball has been released; the ball spins from leg to off. The spin is anti-clockwise and is a combination of side spin and over spin; the seam of the ball points to gully as it goes down the pitch.

## THE TOP SPINNER

Another variation in the leggie's armoury. The back of the hand points towards the batsman when delivery is complete. The ball should not spin but go straight on and because of the overspin bounces a little higher than normal.

## THE WRONG'UN

The same grip as the leggie but the hand and wrist come right over so the back of the hand faces the ground when the ball has been released. Instead of being spun off the index

### TIP

Good coaches will stress to pupils who want to start on a career of over-the-wrist spinning that there is no short cut to success in any department of cricket, and this applies especially to this type of spin bowling.

and third finger it is spun mainly off the index finger. The seam points to fine leg on the way down the pitch. This is one of the leg spinners variations, or "tricks". The wrong'un is meant to appear like a leg spinner but actually turns in from the off, hopefully trapping the batter leg before or bowled.

## Spinning To Win, and the

- As young players develop at different ages they will grip the ball in a way that "comfortably" allows them to spin it. If they are achieving good spin then don't change them, however unorthodox their grip may be.
- Coaches must emphasise the role of the wrist, particularly for leg spinners. A correctly cocked wrist will facilitate good side-ways turn and loop, but watch for the pre-cocked/tense wrist that will stifle natural wrist rotation and spin.
- Spinners must spin the ball hard if they are to have a future. Our aim is to develop attacking spinners – we must encourage them to spin the ball.
- Spinning the ball into the air as hard as possible achieves loop, a vital ingredient in spin bowling; it is possible for spinners to bowl tidily with a flat trajectory and so conserve runs, however, when looking to the future, these bowlers have little potential.



## THE OFF SPINNER

The ball is held firmly, with the index finger the main one used in imparting the spin. Make certain that the back of the hand faces to mid wicket (in the case of a right-hand bowler) when the ball has been delivered.

The off spinner may deliver the ball from a higher position because his wrist position is more easily accommodated by brushing the ear and ripping the fingers down the outside of the ball. A

should be in a "shaking hands" position. This will keep the head and body upright.

## ARM-BALL

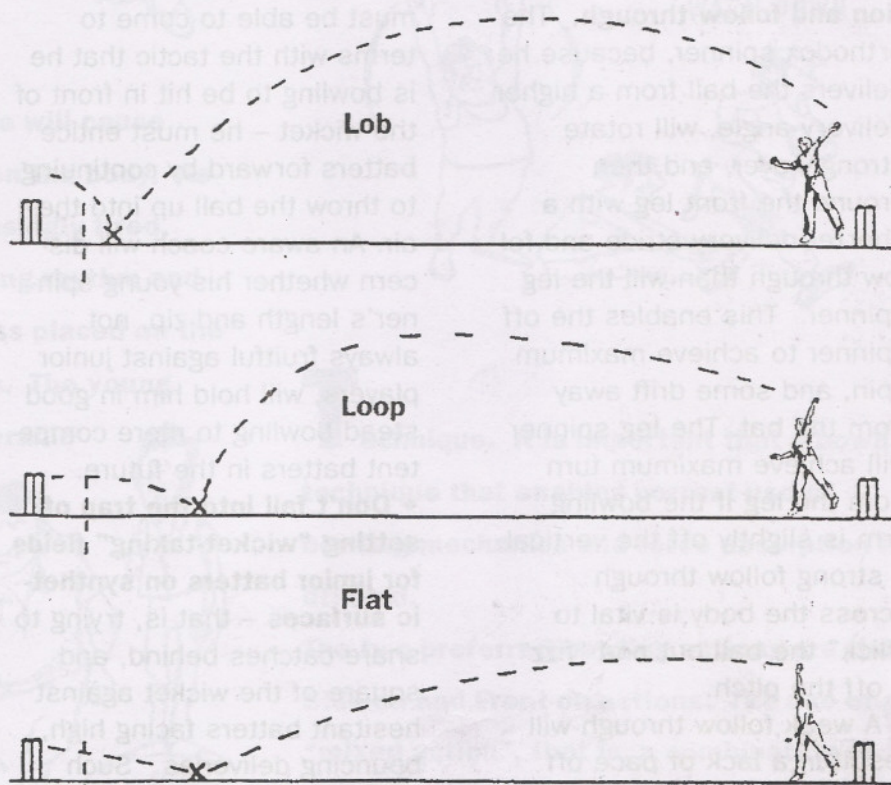
The exponents of this delivery have the ability to make it appear just



like an off spinner to the batter. In fact as the ball floats towards the slips, it can have the same deceptive effect on the batter as does the leg spinner's wrong'un – he plays for the wrong spin, and therefore down the wrong line.

## Secrets Of Loop

- To consistently achieve loop, spinners must keep their heads upright and vertical on delivery; this will keep their chest and shoulders square on at release, thus enabling their bowling arm to rotate at the best angle to achieve the spin they need.
- The key factor in keeping the body upright and the eyes level on delivery is the length of delivery stride, particularly with orthodox spinners (e.g. off spin). The shorter the stride the more stable the front leg will be, thus enabling bowlers to keep their heads steady and to release the ball from a position comfortably wider than the vertical, and not behind the head.



# Spin Checklist



**LEG SPINNER**

- Closely **check body rotation and follow through**. The orthodox spinner, because he delivers the ball from a higher delivery angle, will rotate strongly over, and then around the front leg with a shorter delivery stride and follow through than will the leg spinner. This enables the off spinner to achieve maximum spin, and some drift away from the bat. The leg spinner will achieve maximum turn from the leg if the bowling arm is slightly off the vertical. A strong follow through across the body is vital to "flick" the ball out and "fizz" it off the pitch.

- A weak follow through will result in a lack of pace off the pitch enabling batters to play cross-batted shots to



**OFF SPINNER**

be hit down the ground. He must be able to come to terms with the tactic that he is bowling to be hit in front of the wicket – he must entice batters forward by continuing to throw the ball up into the air. An aware coach will discern whether his young spinner's length and zip, not always fruitful against junior players, will hold him in good stead bowling to more competent batters in the future.

- **Don't fall into the trap of setting "wicket-taking" fields for junior batters on synthetic surfaces** – that is, trying to snare catches behind, and square of the wicket against hesitant batters facing high, bouncing deliveries. Such methods have no future against competent players.

balls that ought to be drawing them forward, thus severely disrupting conventional field placings. A strong follow through not only provides necessary pace and fizz but it also signals an action with good rhythm.

- As a coach, your prime obligation is to encourage your young spinner to

- **Developing a spinner's "bag of tricks"** can happen anytime in a young spinner's career, but beware – while young spinners may be capable of "delivering" wrong 'uns, arm balls, top spinners, under-cutters etc., their effectiveness can be greatly reduced by a lack of control and pace off the pitch. That's because they do not have mature physical strength, the vital ingredient when manoeuvring the wrist into position to deliver variations.

- **A most effective variation** for spinners of all ages, and one easily practised, is a **change of pace**. If a young bowler is taught to understand the subtleties of changing his pace, he will be able to bowl competitively without losing control by attempting variations beyond his maturity and experience.

- **Encourage young spinners to experiment and practise**, but don't get carried away with the odd success and proclaim the young spinner the "next Test Bowler".

**Emphasis should be on the consideration of their basic action and standard delivery**, bowling with consistency of line, length and spin until they can translate off field experimentation into on field effectiveness. Monitor their progress one step at a time and don't expect results overnight.

# Injury Prevention

To reduce the injury factor in pace bowlers the Australian Cricket Board National Coaching Committee recommends that coaches implement SPOT.

**S**creen bowlers at an early age for all risk factors including postural stature. Correct posture enables the proper functioning of the body and efficiency of movement.



EVERYDAY LIFESTYLE



POOR POSTURE

**O**verbowling or overuse will cause undue strain to be placed on the body. As the bowler becomes increasingly tired, changes can occur in bowling rhythm and action, increasing the stress placed on the spine and other body joints. The young bowler is particularly vulnerable

in periods of rapid growth and maturation. Guidelines for bowling use are recommended for all age groups.

PHYSICAL MATURITY

MORE OVERS



LESS OVERS

**P**hysical preparation is essential. Fast bowlers of all ages who undertake a well balanced training program that develops and maintains those specific fitness requirements of strength, endurance and flexibility will increase the chance of improving performance and decrease the likelihood of injury.



WARM-UP, WARM-DOWN

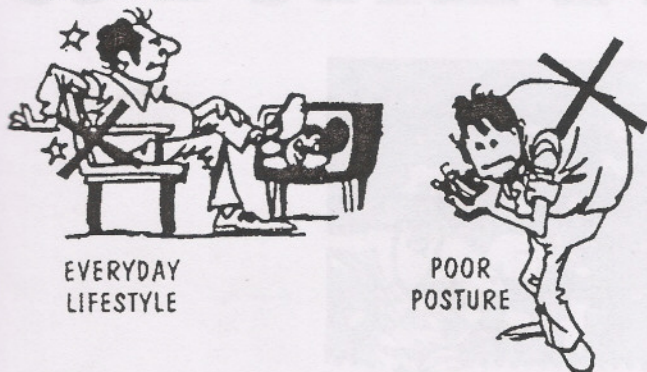
**T**echnique. It is important that a bowling technique that enables correct use of bowling mechanics and force absorption is utilised.

The two preferred bowling actions are the Side-on and Front-on actions. The use of a "mixed action", that is, a combination of the Side-on and Front-on actions, is a major risk factor.

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