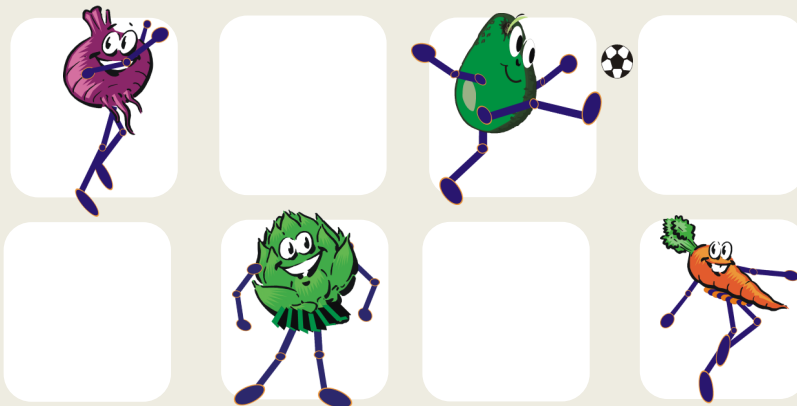




## Exercise Safety Basics



- ◆ Know the kids & their conditions e.g. mobility restrictions
- ◆ Modify activity to suit ability
- ◆ Safe environment (e.g. level surface, equipment in good repair, heat/cold)
- ◆ Warm up
- ◆ Stretching can be an important part of preparation for vigorous movement, but it should not be done cold. Warm up before stretching.
- ◆ Teach safe exercise movement principles\*
- ◆ Avoiding potentially dangerous exercises\*\*
- ◆ Plenty to drink. Water is the best choice. Encourage a good drink of 300 to 500ml 15 to 20 mins before exercise. Top up with a smaller drink of 100 to 250mls if exercise extends beyond 20 mins.



## Safe Exercise Movement Principles

You can increase exercise safety for kids by sticking to the 3 principles below:

### 1. Promote good posture

*By maintaining:*

Neutral Spine (keeping the spine in its natural curve)

Braced abdominals

### 2. Promote normal range of joint motion

*By avoiding hyperextension or extreme flexion of:*

- Neck
- Shoulders
- Spine
- Knees

*And by avoiding very small movements within a range (such as making tiny arm circles with arms held out from sides), or even static muscle contractions (isometrics).*

### 3. Promote controlled movements

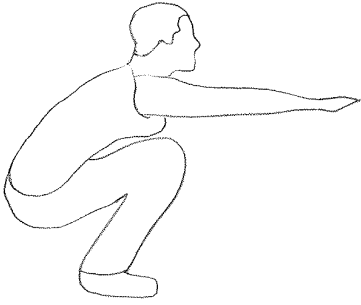

*By avoiding:*

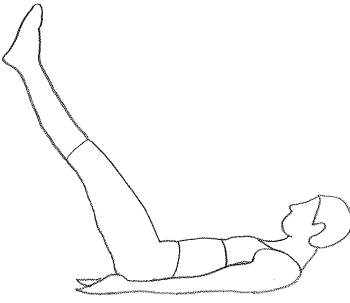
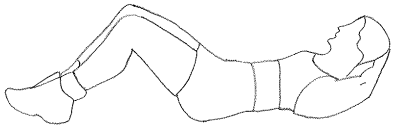
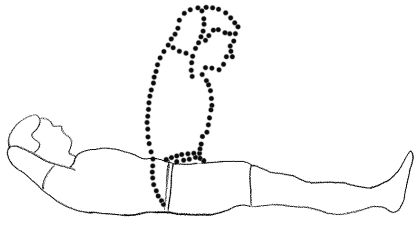
- Ballistic (bouncing) movements while stretching
- Repetitive Movements (of a single exercise)
- Excessive Loading of joints e.g. standing straight leg toe touches
- Momentum (uncontrolled swinging movements).
- Twisting movements with the feet firmly planted

## Some Potentially Dangerous Exercises and Safer Alternatives

Contra-indicated Exercise	Discussion	Safer Alternatives
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The drawings below illustrate exercises that are absolutely contra-indicated, together with safer choices.

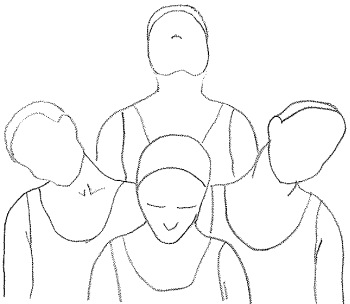
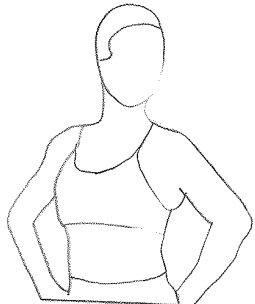
<p>Deep knee bends <span style="float: right; font-size: 2em;">✗</span></p> 	<p>Deep knee bends cause stress and compression to the knee joint as well as overstretching of the surrounding muscles.</p>	 <span style="float: right; font-size: 2em;">☑</span> <p>Restrict squatting action to only as far as the thigh is parallel to the ground.</p>
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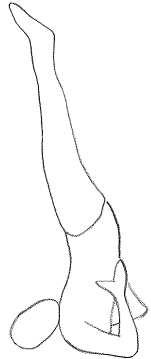
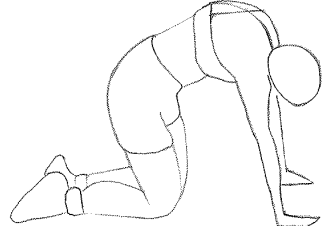
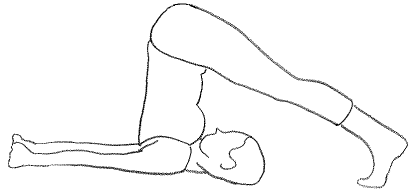
<p>Double Leg Raise <span style="float: right; font-size: 2em;">✗</span></p> 	<p>Both of these activities are primarily designed to strengthen the abdomen. However the prime movers are the hip flexors not the abdominal muscles. The abdominal muscles are in an isometric contraction to allow this to happen. The extreme load on the hip flexors puts the lower back at high risk. Please note that full sit ups with bent knees are better but still not recommended for school groups.</p>	<p>Abdominal Curls <span style="float: right; font-size: 2em;">☑</span></p> 
<p>Straight Leg Sit up <span style="float: right; font-size: 2em;">✗</span></p> 		

## Some Potentially Dangerous Exercises and Safer Alternatives

Contra-indicated Exercise	Discussion	Safer Alternatives
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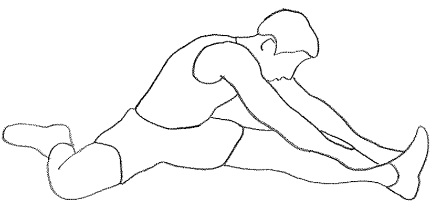
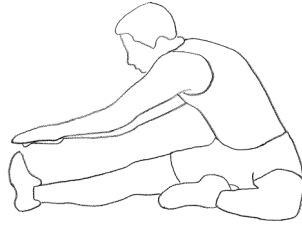
<p>Neck Circles <span style="float: right; font-size: 2em;">✗</span></p> 	<p>This motion creates undue stress in the cervical discs. Rather than rotation it is recommended to gently turn the head to each side and look over the shoulder.</p>	<p>Turn the head side to side <span style="float: right; font-size: 2em;">✓</span></p> 
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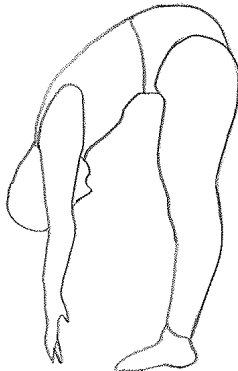
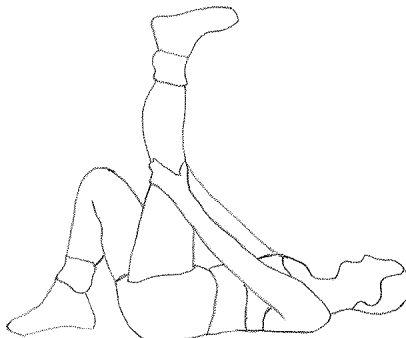
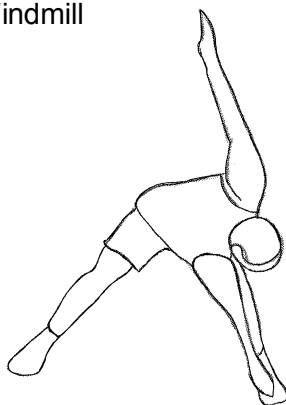
<p>Shoulder Stand <span style="float: right; font-size: 2em;">✗</span></p> 	<p>Both of these activities are primarily designed to stretch the upper back. However they hyper-flex the neck (under load) and place the cervical spine under extreme pressure. They also compress the trachea.</p>	<p>Angry Cat <span style="float: right; font-size: 2em;">✓</span></p>  <p style="text-align: center;">Or try</p> <p style="text-align: center;">Leaning back hanging on a pole</p>
<p>Plough <span style="float: right; font-size: 2em;">✗</span></p> 		

## Some Potentially Dangerous Exercises and Safer Alternatives

Contra-indicated Exercise	Discussion	Safer Alternatives
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The drawings below illustrate exercises that are absolutely contra-indicated, together with safer choices.

<p>Hurdler stretch <span style="float: right; font-size: 2em;">✗</span></p> 	<p>Excessive flexion (under load) of the knee</p>	<p>Modified Hurdler Stretch <span style="float: right; font-size: 2em;">✓</span></p> 
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<p>Standing Toe Touch <span style="float: right; font-size: 2em;">✗</span></p> 	<p>Both of these activities are primarily designed to stretch the hamstrings but both incorporate the very posture that is frowned upon in manual handling i.e. bending forward at the hips with straight legs. This creates large forces on the muscles of the lower back. The windmill also adds momentum and rotational forces to an already high risk situation.</p>	<span style="float: right; font-size: 2em;">✓</span>  <p style="text-align: center;">Hamstring Stretch in prone position with floor leg bent</p>
<p>Windmill <span style="float: right; font-size: 2em;">✗</span></p>  <p style="text-align: center;">(or alternate to standing to touch)</p>		