Principles for Forward Bending

Benefits of forward bending
Forward bends generally encourage a relaxed introverted state of mind where the exhalation is emphasized; all forward bends are calming and great for alleviating anxiety and a busy mind.

We must always work sensitively into forward bends, gradually releasing the muscles of the back of the body. All posterior muscle tissue is stretched and the spine is lengthened, and by doing so the spinal vertebrae are opened as they decompress, improving the functioning of the spinal nerves and the circulation of spinal fluids; indeed the releasing of spinal muscles has a relaxing effect upon the sympathetic nervous system creating their calming and rejuvenating effect.

Forward bends mobilize the hips, plus they will lengthen the hamstring muscles, which are attached to the pelvis at the ischial tuberosities.

For all of these reasons forward bends are very helpful to mentally and physically prepare us for the seated poses used in the quieter practices.

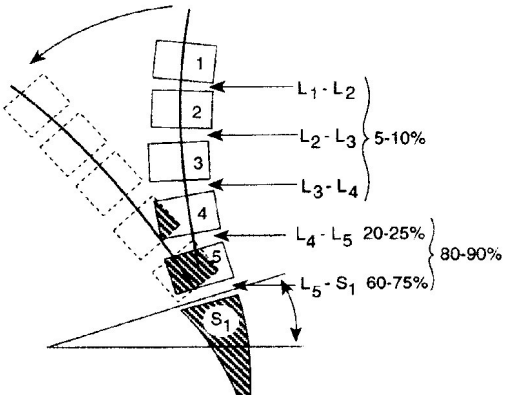
Additionally forward bends are great at massaging the abdominal organs and as such assist digestion and elimination, plus they can be used when there are menstrual problems such a painful cramps.

Points of resistance
When resistance is physically experienced forward bends can also create mental frustration. In these situations they can be a great teacher as a vehicle for surrendering and consciously letting go, working with what is. We must also remember for some students forward bends will always be a great challenge because their physical structure is such that they will experience compression either at the hip joints where structurally there is little rotation or they will meet compressed tissues at the front of the groin, here we must **help students to recognize that if the limitations to stretching forwards is experienced at the back of the body then that is a sign they can work slowly over time to alleviate that tightness,** as Paul Grilley calls it, this is tensile tension, but if limitation is **experienced at the front of the body then that will be their structural limitation.**

The Significance of an Anetrior Tilt for Forward Bending

We need to practice with an **anterior or forwards tilt of the pelvis** so we are primarily **folding forwards from the hips** rather than from higher in the spine itself.

When the movement occurs at the hips this means we do not place the vertebral spine at risk by placing excessive pressure upon these areas. This is particularly important for the lumbar spine where most of the flexion in the spinal column occurs.



Note that as you can see from the diagram opposite the lumbar vertebrae can only flex forwards for the angle of the natural lordosis (lumbar arch) so to flex the torso forwards we need also to rotate at the hips so the whole pelvis rotates forwards; now the entire length of the spine, from the tailbone to the top of the neck can **flex forwards safely as one length**.

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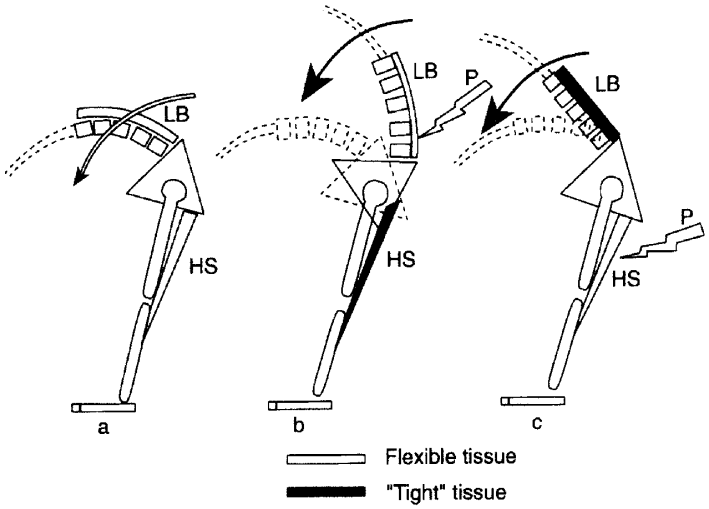
a) If the hamstrings (+ adductors) are flexible and the back is flexible then the pelvis can tilt forwards and a good forward bend is achieved.
b) If the hamstrings are tight then we cannot tilt the pelvis forwards as the hamstrings are attached to the ischial tuberosities of the pelvis (sits bones). This leads to spinal compression, especially in the lumbar region.
c) If the lumbar spine is tight then the pelvis is kept in a posterior (backwards) tilt and this can place excessive strain on hamstrings, as well as the spine, as they must then lengthen even further to create a forward bend.



Therefore to practice forward bends we will need **to mobilize the hip joints and spine**, but also we will need to **increase flexibility in hamstrings and adductors**. Meanwhile whilst the hamstrings, adductors and hips are still tight we can help assist proper forward movement (flexion at the hips) by sitting on a block when performing a seated forward bend to help tilt the pelvic forwards, or we can bend the knees if performing a standing or seated pose, to aid an anterior pelvic tilt and avoid excessive pressure in hamstrings and lower back.

Use of the Breath
We can utilise the breath, **inhaling as we lengthen the spine and exhaling as we fold forwards**. This is the way in which we enter the pose but is also the way in which we can work within the pose, using the inhalation to renew the length with the spine as we lift the chest and exhaling as we fold forwards again. This keeps the spinal column elongated throughout, avoiding excessive flexion between the vertebrae placing excessive pressure upon spinal ligaments & discs. It also helps us to engage the abdominal muscles which must be utilized the help lengthen and support the back.

Additional Teaching Points
We must always mindfully **keep the cervical spine long and neutral**.

The legs must be placed symmetrically feet pointing forwards, knees aligned forwards. At all times we should be aware that for all forward bends we **do not hyperextend at the knees** and to avoid this we can create a microbend at the knees. Hyperextension at the knees triggers the stress response where the nervous system tightens the body and can compress nerves and arteries behind the knee. (more later)

When choosing our form of forward bending we must also **consider the weight of the arms**, deciding whether to place hands at the hips, arms out sides or arms above the head etc. because these are progressively placing more pressure upon the spine. These variations in arm position can be used as developmental options gradually increasing the work upon the spine as the arms are place further away from the centre of the body.

At full flexion we can try to **draw the ischial tuberosities apart** utilizing the adductor muscles. There is always a subtle internal rotating action from the legs, whilst keeping the feet & knees aligned.

Good preparation for forward bending
All forward bends are best approached when the body is warm and awakened. We need to appreciate the quality of sukha or 'ease' to work with these asana.

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As you may have realized already hip mobilisers, hamstring and adductor stretches all help to prepare the body for forward bending. We should also mobilise the spinal muscles. Some core strength is required, as is some thigh strength (quadriceps), and back strength. We must also be aware of the muscles of the feet and ankles especially in standing forward bends.

Specific considerations for forward bends

- As previously stated decide upon the placement of the arms, perhaps offering a couple of variations so students can choose the correct level of intensity. (remember leverage)

- Always offer the option of bending knees and in seated forward bends always offer a block beneath the buttocks to aid the anterior tilt of the pelvis where required and know that sometimes a student can work with the back almost vertical, simply working to rotate the pelvis whilst placing a belt around the balls of the feet to create a dynamic circuit to work the hamstrings. We can also ask students to lift the tailbone and sitting bones to ensure the whole pelvis moves in alignment with the spine.

- Avoid overly using the arms which can be used to more forcibly pull the body into the forwards movement and remember to work with a lengthened spine, folding forwards from the hips with the whole spine moving as one.

Areas for caution

Abdominal problems, including hiatus hernia	Avoid excessive compression of the abdominal region. For hiatus hernia only work halfway with standing forward bends and do not move deeply into seated forward bends as they can create acid reflux.
Asthma	Can help by encouraging breathing into the back & emphasizing the exhalation, often the problematic aspect of breathing for asthmatics.
Back conditions	Generally forward bends are problematic so with acute problems they need to be avoided. Thereafter go gently bending knees, blocks beneath buttocks when seated and it is often helpful to place a small roll in the groin to create space in the hip joint. Avoid for at least 3 to 6 months for herniated disc.
Depression	May need to keep head and chest slightly raised and stay for short periods only as forward bends may be too introverting and quieting
Ear or eye conditions	Do not take the head lower than the heart, working with half forward bends when standing
Hamstring injury	Avoid any pain, bend knees to alleviate tension on hamstrings
Heart conditions, hypertension & mature diabetic	Do not keep the head lower than the heart, working with half forward bends when performing standing forward bends if holding the pose
Hip problems	For total hip replacement do not move into deep forward bends, when standing work halfway only, when seated use a block and belt staying upright. For hip resurfacing work with caution.
Low blood pressure	Take care to move slowly between different heights e.g. from seated to standing etc. Can take extra breaths as move slowly upwards or downwards.
Osteoporosis	Work cautiously bending knees, as a deep forward bend can overly compress vulnerable joints, especially in the lower back.
Pregnancy	Work with legs apart where necessary, with support if necessary; for standing forward bend can move half way using aids such a a chair if needed.

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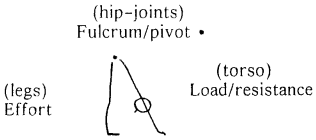
Sacro-iliac Joint Strain	Forward bends usually aggravate this condition, if acute may need to use an alternative, otherwise with caution bend knees & for seated pose sit on a block with bent knees
Sciatica	Forward bends usually aggravate this condition so we may need to bend knees and if seated pose sit on a block with bent knees to alleviate pressure on the sciatic nerve
Vertigo	May need to work very slowly when moving between different heights using supports where necessary

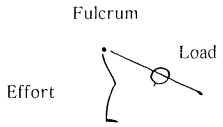
Note:

For all asana the stretch experienced must always be felt at the belly of the muscle not at the attachment and for forwards bend this especially means we should not experience the stretch at the sitting bones (the origin of the hamstrings) or at the knees (an attachment point for adductors and hamstrings). Nor should we experience any strain at the sacro-iliac joint or lumbar spine, and if these are already chronically present we need to modify our forward bends.

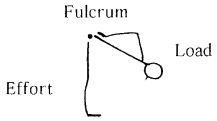
Applying the Principles of leverage to forward bends: Uttanasana



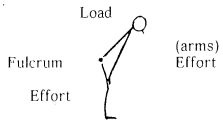
a) With straight legs and straight arms a great deal of effort is required from the legs to lift the upper body. The effort is a long way from the fulcrum, the hips, and the resistance is great since the load is far away from the fulcrum.



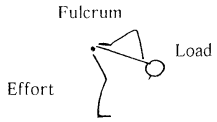
b) However if we bend knees then the effort has moved closer to the fulcrum making it easier to lift the load of the upper body



c) If we place our hands on the sacrum with elbows bent then this has greatly reduced the load to be lifted as the load has moved closer to the fulcrum



d) If we use the arms as levers then this decreases the load by increasing and spreading the effort



e) With bent knees and hands to the sacrum we increase the effort and reduce the load simultaneously since both and the load are closer to the fulcrum

These principles will apply to all forward bends and we will need to consider how we teach forward bends to our students progressively, using modifications as necessary.

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