

DANCE RESOURCES BY GEORGINA BUTLER

Ballet: Learn about...

ALIGNMENT AND POSTURE



Alignment and Posture

As well as being visually pleasing, good posture and alignment ensure the most effective movement and can help to prevent development of muscles imbalances, strains and injuries.

Alignment

Alignment is **the placement of the joints in anatomically correct positions.**

Correct alignment of the body, specifically the joints, **makes movement more efficient** and **reduces the risk of injury.**

Advice from experts in anatomy, fitness and dance suggests that the most efficient alignments are those where the body is balancing on the bones like **building blocks** – so that the major joints are neatly **stacked** like the rungs of a ladder. This **reduces stress on the joints**, makes the body look and feel **longer** and produces more **efficient movement.**

There are **four key building blocks of alignment** which are particularly efficient for dancers:

1. Knees over centres of the feet (“knees over toes”).
2. Arches of the feet vertical (“pull up the arches”)
3. Front of the pelvis vertical (“neutral alignment”)
4. Rib cage vertical over the pelvis (“use abdominal and back muscles together to balance ribs”)

Knees Over Centres Of The Feet

Whatever the position of the legs, the centres of the knees should align with the centres of the feet so that the ankle and knee joints can both hinge without twisting.

Therefore, **whenever the knees flex they should go directly over the feet**. This applies whether the feet and knees are pointing forward in parallel or pointing more to the sides as they are when turned out. This relationship is also the case when the legs are not in a symmetrical position (e.g. in a lunge).

When it comes to turnout for ballet, a dancer's knees, ankles and feet are put at risk if they force their feet further to the sides than their knees can go.

Dancers should work to improve turnout by challenging their hips slightly. However, positions should still feel comfortable and good alignment is essential. If dancers pretend to have more turnout than they actually have (by trying to show more turnout than their hips can manage) they misalign their feet and stress their knee and ankle joints.

TIP:

Concentrate on understanding how good alignment of the knees over the centres of the feet should **LOOK** by practising some pliés looking straight down to check alignment is correct.

Next, practise some pliés with correct alignment with your eyes closed so that you **FEEL** the correct alignment without looking.



Arches Of The Feet Vertical

Having good alignment at the feet can increase movement efficiency in the hips, knees and ankles, as well as in the feet.

Good alignment over three bony landmarks on the feet allows the weight of the body to balance on the bones with **less stress to the muscles, tendons and ligaments**. It also allows for **shock absorbency** when landing from jumps.

The **alignment landmarks of the foot** are the:

1. Base of the big toe
2. Top of the arch
3. Heel

When body weight is correctly distributed, these three landmarks will be on the same vertical plane and the Achilles tendon will make a straight line up from the heel.

The pressure of the body weight will be equally distributed over the base of the big toe, base of the little toe and the heel, with the arch pulled up.

Two common **misalignments** at the foot:

- a) **Pronation** ("rolling in")

Letting the top of the arch fall to the inside of the base of the big toe and the heel

- b) **Supination** ("sickling")

Letting the top of the arch fall to the outside of the base of the big toe and the heel

Some amount of pronation or supination is supposed to occur naturally when we walk, run or jump to allow for shock absorption and efficient movement. However, too much movement in either direction can produce stresses which could result in injury to the foot, ankle and knee.

TIP: To understand how alignment at the feet should **LOOK**, check in the mirror to see if your arches are vertical and your Achilles tendon is straight.

(Depending on the mirrors at your disposal – and to save excessive craning of your neck - you might like to ask someone to stand behind you to take a photograph of your Achilles tendon for you).

Aim to **FEEL** equal pressure over the three points on the bottom of each foot (big toe, little toe and heel).

Front Of The Pelvis Vertical

The pelvis is the link between the lower limbs (legs and feet) and the torso. Proper or neutral pelvic alignment enables effective muscle use and efficient movement execution – including the external rotation from the hip joint referred to as “turnout”.

Dancers must learn to move from their centre and the pelvis is the base of this centre. It is made up of the ilium, ischium and pubic bones on each side. The spine is connected to the pelvis by the sacrum, which is wedged in between the two pelvic bones at the base of the spine. Your centre of gravity lies just in front of your sacrum.

To hold a balance on one foot, dancers must maintain their centre of gravity in a vertical line that passes through their foot to the floor.

TIP: Visualize your pelvis and sacrum stacked over your standing leg for secure balancing.

It is important to understand why dancers need an extremely stable, well-aligned pelvis. Essentially, it is because the core musculature inserts into the pelvic region and leg movement starts from the pelvis. Hence, **an extremely stable pelvis will help keep the supporting leg held while allowing the working leg to relax in its hip socket to produce a greater range of motion and a fluidity of movement.**

For most dancers, the pelvis is well-aligned when the top front corners of the pelvis (the ASIS – anterior superior iliac spines – or “headlights” / front of the hip bones) and the lower front of the pelvis (pubic symphysis) are on the same vertical plane (stacked level).

If the ASIS are in front of the pubic symphysis, the pelvis is tipped forward. This is called **anterior tilt** (sometimes known as “arching the lower back”).

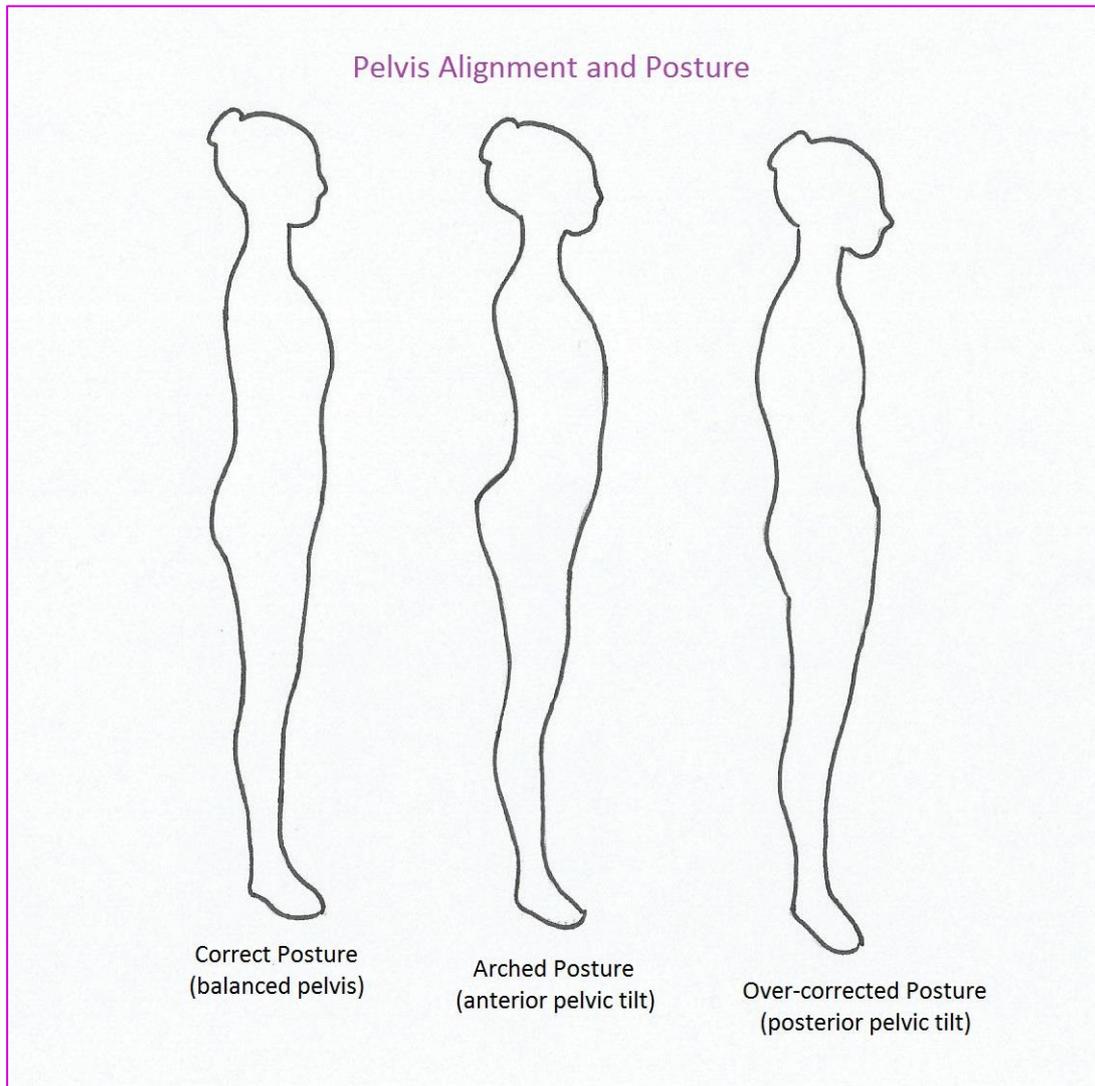
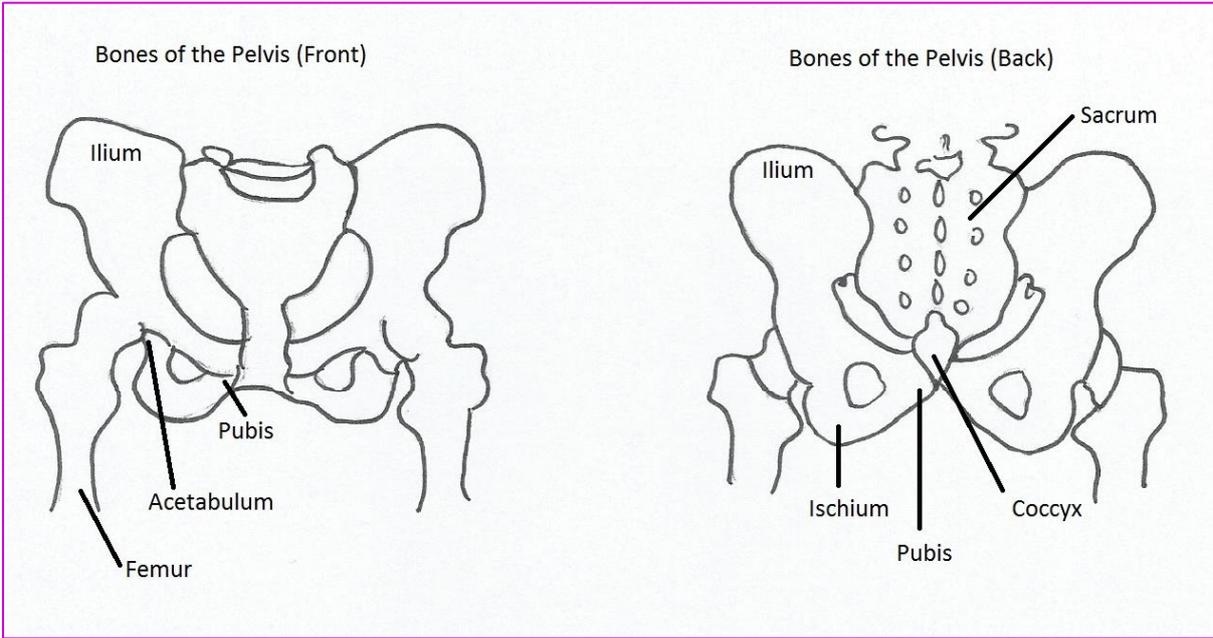
Anterior tilting causes unnecessary stress to the lumbar spine and it can shorten the muscles that cross the front of the hips. Dancing in this position also means the abdominal muscles slacken off and the inner thighs cannot activate efficiently (so turnout is compromised).

If the ASIS are behind the pubic symphysis, the pelvis is tipped backward. This is called **posterior tilt** (sometimes known as “tucking” or “over-correcting posture”).

Posterior tilting can over-activate the quadriceps (thigh muscles) and gluteal muscles (bottom) and may cause these muscles to become over-developed. Posterior tilting makes it harder to move freely.

Engaging the abdominal muscles can prevent anterior pelvic tilt but engaging them too much can cause posterior tilt. Work to find the middle-ground so that the bones are in balance but your body can still move efficiently.

TIP: Try to get used to continually assessing your alignment to FEEL when the pelvis is balancing on the top of the thigh bones (heads of the femurs), rather than locking your body into a position.



Rib Cage Vertical Over The Pelvis

When aligned efficiently, the rib cage is vertical and directly above the pelvis.

A common misalignment is to lift the bottom of the rib cage forward and up, which tilts the top of the rib cage back. This often occurs with anterior tilt of the pelvis.

TIP: If pelvis alignment is corrected, misalignment of the rib cage is easier to see and feel. If you find that this happens, do not be disheartened. You are on your way to correct alignment as you simply need to get used to stacking your ribs above the correctly-aligned pelvis! **You should always aim to adjust misalignments gradually and simultaneously toward neutral** due to the interactive nature of alignment.

If the rib cage is always tilted the muscles on the back of the spine will become shorter, making it more difficult to bring the spine into neutral alignment.

Like many misalignments, tipping the rib cage reduces movement efficiency and also looks less aesthetically pleasing.

TIP: Balanced use of both the abdominal and back muscles can influence rib cage alignment. **Work to look and feel longer, balanced and at ease by engaging both your abdominal and back muscles just enough, without creating excess tension.**

POSTURE

Posture is a term that is used synonymously with alignment.

Posture is often referred to in the context of standing in an upright position but it is important not to limit your understanding of posture only to static positions.

Both posture and alignment are dynamic as dancers need to be able to constantly make tiny adjustments to return to neutral, biomechanically efficient and aesthetically pleasing body positions while moving.

TIP: It may be better to think about “postural alignment” when dancing to ensure that you pay attention to how you are supporting and adjusting your body weight for maximum efficiency at all times.

Rather than thinking of being “straight” think of being stacked vertically and in neutral alignment.

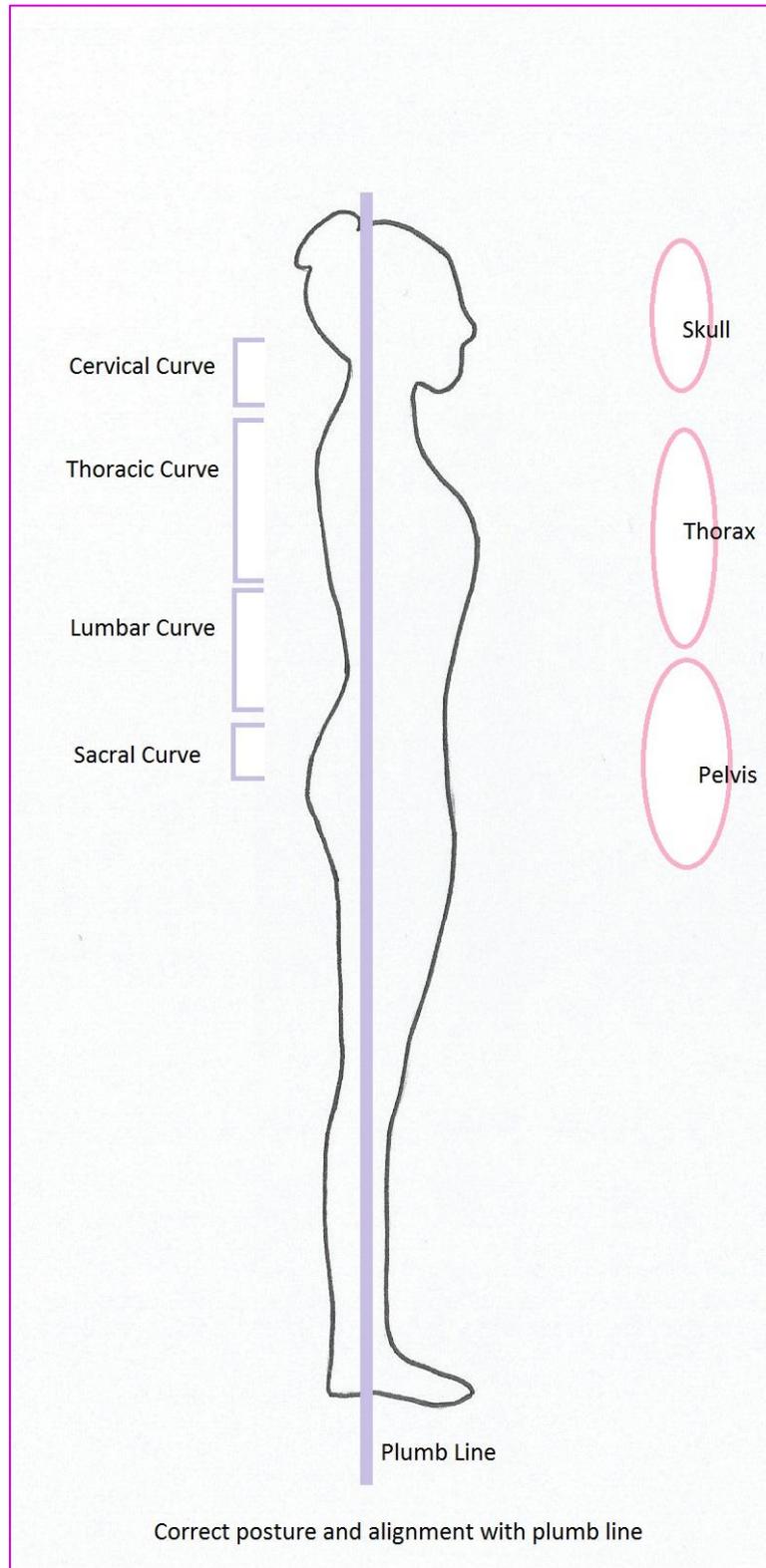
The spine has four natural curves (the cervical curve, the thoracic curve, the lumbar curve and the sacral curve). We do not want to iron out these curves as any change in the curves causes undue stress on the intervertebral discs and unnecessary muscle action. Instead, **think about stacking the body parts in order to lengthen the body and allow the curves to be properly maintained.**

Postural Alignment Along The Plumb Line:

Picture the three primary body weights: the skull, the thorax (trunk/torso) and the pelvis stacked along the plumb line.

The PLUMB LINE is an imaginary line or line of gravity that runs from... the centre of the top of the head straight through the centre of the shoulder; centre of the rib cage; the centre of the greater trochanter (near the neck of the thigh bone) at the hip; the midline of the knee; down through the side of the ankle into the floor, with no deviations.

The plumb line applies whether in parallel or turned out.



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