

Eight Myths of Inversions

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For hundreds of years the Eastern practice of yoga has taught many physical poses that have benefited the human body. From twists to forward folds, these postures or “asanas” as they are called, have loosened up joints, freed the spine and have created dynamic and ever-lasting changes.

Among the many yoga asanas comes a variety of poses known as “inversions.” It is through the practice of inversions where one finds himself going upside down. In fact, the classic definition of inversions is to place the heart higher than the head. An inversion pose may be a “headstand,” “shoulder stand,” “handstand” or many others. While it is a common practice to participate in inversions there is a tremendous amount of mythology as to their actual benefits. In fact, there may be more myths than truths as to their benefits.

When we create a belief about something it is important to continue to update that belief once more information comes to us. If we do not update our beliefs we begin to live in an age where we engage in a behavior or practice that has little or no relevance to our actual present day condition. The beliefs about yoga inversions are just like this. While they might have been created because they were believed to derive some potential benefit, these beliefs have never been updated to modern day knowledge. Yoga inversions are based primarily on myth and not on truth.

The list is long about who should not be doing an inversion. Contraindications for inversions are the following; high blood pressure, history of stroke or heart disease, diabetes, pregnancy beyond the first trimester, glaucoma or other eye disorders, spinal problems, chronic neck pain, excess weight, dizziness, head injuries, inner ear problems, hiatus hernias and osteoporosis. While much has been written about the complications of inversions, the potential benefits of inversions remains a bit sketchy. Here is a list of the eight most popular myths that are believed to be true about inversions.

Myth 1: Inversions Bring More Blood to the Brain

The most common myth about inversions is that an abundance of blood is brought to the brain when one is upside down for short periods of time. This is not true. In fact, the yoga literature is bombarded with phrases like, “the hypothalamus gland is bathed in fresh blood while inverted,” and “the pituitary gland is saturated with increased blood flow while upside down.”

The brain is a very sensitive organ. The brain likes a consistent environment. It does not care for too little blood and it also does not

want too much blood. The brain will die very quickly without adequate perfusion (blood flow) and it will explode with broken blood vessels if there is too much blood volume (stroke).

When too little blood reaches the brain you faint. This is the body's means of self protection. When you faint you go unconscious briefly and collapse. This allows your head to come down to the level of your heart where most people quickly regain consciousness as blood flow is returned.

Just as important is the fact that the brain attempts to keep too much blood from entering into the brain. The smooth muscles will constrict, limiting the volume of blood in the neck region that can actually enter into the brain. The body will restrict too much blood from entering into the brain which might cause potential damage to arteries and capillaries. While believing that the brain is bathed in fresh blood while inverted sounds good on paper and in story books the reality is that the brain enjoys an even flow of blood and not an increased flow. The brain will prevent an excess of blood from entering. In this case more is not better.

The delicate glands within the brain, like the pituitary and the hypothalamus, are believed to be drenched in fresh blood flow while inverted. This is also not true. It does not happen. This is just another antiquated myth that has never been updated. Just like the other parts of the brain the inner glands enjoy a constant flow of blood and not an excess of blood flow.

Another part of the blood flow myth is that inversions will flush out built up toxins in the brain. There is no evidence of this as the blood pressure and volume do not actually change within the brain that would create this affect.

Inversions may even tend to reduce blood flow coming towards the brain. In order to practice many inversions one must tighten up muscles in the neck and shoulders that normally are not tightened when standing. The tightening of these muscles will act like a vice to squeeze arteries that are normally more open. As a result, one may suffer from more diseases where reduced blood flow is an instigator. While the myth of increased blood flow to the brain has been around for some time there is very little relevance to its truth. Updating our beliefs begins with the belief about blood flow.

Myth: 2 Increased Pressure Equals Increased Volume

An increase in a liquid or gas pressure does not necessarily mean that the volume increases as well. In the case of inversions this holds true as well. When one turns upside down there "may be" a change in the arterial pressure leading to the brain. In *Anatomy of Hatha Yoga*, H. David Coulter "calculates" that the blood pressure increases from 100/60 mm Hg in the brain while standing upright to 150/110 mm Hg while standing on one's head. As well, while standing upright the

blood pressure to the feet is 210/170 while it is 40/0 while inverted, according to Coulter's "calculations".

The problems with this belief are many. First, Coulter does not say that he "measures" blood pressure in these areas. He "calculates" the blood pressure. According to Webster's Dictionary the word "calculate" means, "to reckon by an informed guess: estimate". This means that the blood pressure to these areas might not be that at all. Coulter is mathematically "guessing".

Let's assume that these measurements are correct. Imagine the scene of a rock concert where ten thousand people are trying to push forward to get through the doors at the same time to get the best seats. Between security checks and only a few doors to the stadium just a few people can enter at one time, despite the increased pressure that exists pushing into the stadium. This is exactly how the brain works.

Just because the blood pressure "may" increase leading towards the head does not necessarily mean that the volume increases as well. The brain has security checks just like the rock concert stadium. The brain has valves and places where the blood is allowed to enter at a regulated volume. In fact, the volume is much more likely to remain constant despite the pressure increase.

If blood flow to the brain were to drop then the heart would automatically speed up to increase the blood pressure. This would deliver more blood volume to the brain, as long it kept the brain at its constant and even environment. But an increase in blood pressure due to any means, including an inverted pose, does not mean that the volume has been increased inside the brain.

Myth 3: Menstruating Women Should Not Invert

Men's domination over the female body has a long history in world events. The yoga practice that most of us Westerners know came from a predominantly male authoritarian system that still maintains control over women's bodies. There is no logical, scientific, or historical evidence to suggest that a woman who is having her period cannot practice inverted poses. This belief can be likened to the practice in many cultures that women produce bad luck when having their period and must be banished away from men at this time.

A woman experiencing her monthly period is shedding layers of mucus membranes and excess blood. Going upside down for short periods of time will not hamper this process whatsoever. If you were to lie on your arm and it falls asleep you might wake up with a numb arm. Shaking the arm out the blood flow returns and the "pins and needles" feeling quickly diminishes. When we are injured and place ice on the injury we temporarily push blood flow away from the area. When the ice is removed the blood will rush back in quickly. While an inversion may temporarily slow the flow of blood out of the body this will quickly change when coming back to an upright position.

The human body has many marvelous ways to adjust to our varying degrees of changes that we put it through. Inversions should be left up to each individual, male and female, to decide if it is appropriate for him or her. Carrying on an age old myth like this means continuing to practice patriarchy that is dipped in a coating of spirituality.

Myth 4: Yoga Inversions Decompress the Spine

The only way that an inversion will decompress the spine is if the lower extremities are held in place by a physical restraint. While this may be the method while using “gravity boots” or a “gym like” machine where you fold over it this is not how the yoga asanas are used.

While in a headstand or shoulder stand the spine is not decompressed. The spine is only compressed from another direction. The spine consists of many separate cartilaginous spongy disks that cushion the space between the individual vertebrae. When upright you are usually compressed from top to bottom. When upside down you are now compressed from the bottom to the top of the body. There is no decompression of the spine taking place whatsoever. Rather, the vertebrae are still being pulled together, this time from the opposite direction.

Inversions most often place more compression forces in the upper spine. Neck muscles tighten up in an attempt to hold the body upright while inverted in asanas like headstands. If you wish to decompress the spine there are ways to make this happen. Yoga inversions are not one of them.

Myth 5: Gravity is the Enemy

A common misconception among many is that we here on Earth are in a constant fight with gravity. Many have declared gravity to be our enemy and use specific measures to try to conquer the affects of gravity. The fact is that while gravity does exist it is not a major force in our lives; it is only a minor force. There are other forces that are more of an issue for us.

Yoga inversions have historically been used to “conquer the affects of gravity.” Unfortunately, this is where the myth-making begins. If gravity were a predominant force in our lives we would all be hunched over with horrible posture and we would all have extremely swollen ankles. This is not the case. Gravity does not necessarily cause us to develop a hunched spine nor does it create the backup of lymph and venous blood flow attempting to return to the heart. Any attempt to correct this with an inversion is undoubtedly going to be misguided because the premise is incorrect to begin with.

It may be true that placing swollen feet higher than the heart will help to drain excess fluids back to the heart. But gravity is not the necessarily the culprit in why this began in the first place.

The yoga world considers gravity to be “the silent killer.” Gravity has been blamed for causing everything from varicose veins to hemorrhoids. Even back pain is blamed on gravity. Along with the myth that gravity affects blood flow into the brain is the myth that turning upside down causes gravity to force old blood out.

For most people the fluid systems of the body function quite well in gravity. The circulatory system is primarily a pressure system that pumps blood to all of the cells of the body, including uphill against gravity. There is a system of valves that help the venous flow move only in a single direction when traveling uphill. Regular muscle activity helps to pump the blood back to the heart as well. As the muscles in the lower extremities contract they help to create a force that pushes the venous blood towards the heart.

The lymphatic system also seems to manage quite well in the world of gravity. There are other reasons that feet are swollen besides the affects of gravity. Once again, if gravity were solely responsible for swollen feet then wouldn't we all have swollen feet because we are all experiencing the affects of gravity? For most, reverting to turning the body upside down is not necessary for these systems to work efficiently. Nature has done a splendid job in designing the human body without the need to turn up side down once a day.

Myth 6: You are a Better Person if You Invert

The illusion that many are led to believe is that you are somehow superior to others if you can spend time upside down. There is often a sense of superiority that regular inverters seem to possess. Just as well this illusion is enhanced by the nicknames for some of the inverted poses. The headstand is often referred to as the “king of all poses” while the shoulder stand is traditionally called the “queen of all poses.” These labels tend to re-enforce this superiority concept.

Inversions are very seductive. They drive our ego. They often help to create an exhilarating feeling. Some report an increase of mental concentration, reduction in stress and anxiety, as well as an improved self-confidence. Others claim that inversions make them more fearless and compassionate in their lives.

Nobody is better or worse for doing a headstand. Students who practice inversions are not necessarily smarter, more relaxed, or more enlightened. While some people report a change in mental state this could be explained by a number of different reasons.

First, when you place pressure on the top of your head while in a headstand the muscles in the head tend to relax. This is a common reflex known by many body workers as “reciprocal pressure.” When the pressure exerted against a muscle is equal to the pressure that the muscle is using to hold tight the muscle tends to let go. This is what happens in the scalp. The same effect can be achieved by sitting down and placing your hands on top of your head with a medium amount of pressure. A headstand is not required to achieve these affects.

Often regular practitioners of headstands report a calming effect. This is because of the pressure exerted against the scalp tends to make the scalp release. Being upside down has little to do with it.

When there is an increased blood pressure coming from the heart to the neck region baroreceptors (sensors in the neck) detect this change. These receptors then signal the heart to slow down and lower blood pressure. This may account for a sense of wellbeing that many experience while inverted. It does not have to do with increased blood flow to the brain.

Another superiority claim is that inversions make one more focused. This may be so but not for the right reasons. Someone who practices inversions with regularity may feel like they are now in control of their body. Others who are just beginning may feel just the opposite. Their Fight or Flight Stress Response may be triggered as they feel very out of control.

For those who feel in control the act of achieving more control is what changes their consciousness. In fact, those who are already addicted to control as a mood altering device (addiction) tend to seek out situations that give them more control. The inversion is just that drug. When up side down and controlling their body they feel “high” and invincible.

There are many reasons why practitioners feel differently while practicing inversions. Most of those reasons are myths though.

Myth 7: Inversions Change the Subtle Energy of the Body

The subtle energy of the body is often referred to as “chi” or “prana.” This energy is similar to an electrical current that flows through a copper wire. Chi cannot necessarily be seen but can be felt and experienced by a skilled person. The belief of the yoga world states that while upside down this energy flow is linked to gravity and will change accordingly.

This is another myth. There is no evidence to suggest that there is any link between a physical force like gravity and a metaphysical force like chi. This belief states that chi must collect in the lower extremities if we were confined by gravity and is much less prevalent in the head. Practitioners who work with chi do not necessarily collaborate this finding. If this were the case we would all be walking around with our feet swollen with chi. The assumption that chi or prana flows to the brain while upside down is just that, an assumption.

If this were also true then a person lying on his right side asleep at night would collect chi in the side closest to the mattress. He would be very chi lopsided when waking. One half of his body would be full of chi while the other half would be diminished of chi. In addition, would an astronaut in space simple explode or wither into a prune because there would be no gravity to guide his chi around?

No, the myth that gravity and subtle energy are linked is just that, a myth. They are two separate forces that may have overlapping ramifications but are not grossly changed while inverting.

Myth 8: Inversions Benefit the Heart

The popular myth is that by placing oneself upside down one is able to benefit the heart. This is just another myth and here is why. Using H. David Coulter's own "calculations" in *Anatomy of Hatha Yoga*, a person performing a headstand will have a blood pressure reading of 120/80mm Hg. Coincidentally, the same person standing upright will have a blood pressure reading of 120/80 mm Hg. They are exactly the same. The blood pressure at the heart does not change from standing upright to turning upside down in a headstand. As already noted, the volume of blood is most likely not going to change as well, as the arteries leading into the heart do not have the same restrictive abilities as those of the brain.

Another popular myth is that an inversion is just as beneficial as cardiovascular exercise. Who is to say that cardiovascular exercise is that beneficial in the first place? Jim Fixx, author of *The Complete Book of Running* died of a heart attack while running. Cardiovascular exercise did not save him. Neither did it save former professional basketball star Pete Maravich who died on a basketball court at the age of forty of a heart attack. Maravich had practiced cardiovascular fitness all his life while engaging in competitive basketball in college and on the professional level. Wilt Chamberlain, another standout professional basketball player, died of congestive heart failure. Cardiovascular fitness did not save him either. In fact, the man who created the belief in the health benefits of aerobics, Dr. Kenneth Cooper, no longer believes that aerobics will make someone healthy, (Fit Magazine, April 2000).

To assume that practicing inversions regularly assumes that cardio fitness is actually good for the body and secondly turning upside down has the ability to produce the same results. Both are myths.

Conclusion: Update Your Beliefs

Can you imagine a time when doctors did not wash their hands before performing surgery? Updating this belief that germs exist and a sterile environment is critical for healing has helped to save millions of lives. Isn't it about time that the yoga world began to update its own beliefs as well?

In many instances the yoga world is still operating in "The Dark Ages." When we are talking about a five thousand year old system like yoga the Dark Ages of the 12th century appear pretty modern. When we live in a belief that is not updated we live a lie and live in a fantasy world. If the yoga world is to have any credibility then it must begin to come out of the world of mythology and put its cards on the table. Just because something is traditional does not necessarily mean that it is

true or correct. When it comes to inversions there is more mythology than there is truth.

Jon Burras is a Wellness Consultant and Yoga Therapist. He strongly believes in updating our mythologies and allowing nature to be the greatest guide in healing. He is the author of the highly acclaimed book called *Return to Nature: The Five Pillars of Healing*.

Resources:

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