

# Hydration



Hydration is used to describe your body's ability to manage water. This means water management at every level down to the individual cells. Correct hydration is dependent of cellular uptake of water, not simply whole body intake of water. Drinking only water is not sufficient to ensure optimal hydration.

If you are well hydrated your body will take the water you drink and distribute it correctly to all the cells in the body that need it, taking with the water all the essential nutrients for those cells. The well hydrated body is also able to use this cellular water to wash out waste products and toxins from the cells and deliver them to the organs of excretion. In a poorly hydrated body these processes will be sluggish or absent, nutrients will be available to the cells and waste products will build up to toxic levels.

Hydration is one of the most fundamental processes in a healthy body, yet it has received very little attention by the biomedical research community and the general population.

## HOW IMPORTANT IS WATER?

Water has several roles in the human body. It gives structure and form to cells and tissues. It provides the medium for movement of heat from the core of the body to the surface. It is the matrix within the body which creates the biochemical reactions that together make up cellular metabolism. Water is the transport mechanism for all internal movements of all nutrients and biomolecules, exchange of

nutrients between the environment and cells and clearance of waste products.

Water is the most important nutrient that the body uses. It is correctly thought of as a nutrient as it is a limiting factor in many, if not all, biochemical processes. The correct metabolism of all other nutrients depends on the availability of sufficient water for correct biochemistry to occur. The macronutrients (nutrients required in large amounts on a daily basis), protein, carbohydrate and fat all require water for their correct assimilation and utilisation. All micronutrients (nutrients required in smaller amounts or less frequently) including vitamins and minerals require water for correct uptake and distribution.

## HYDRATION AND THIRST

Dehydration also downgrades another system – the thirst reflex. Paradoxically long-term dehydration has the effect of decreasing our sensitivity to the very system that should notify us that all is not right. The reason is the thirst reflex is a complex behavioural circuit and is actively filtered by our higher brain functions. To understand this consider a situation at a

cocktail party. You are standing speaking to someone and you are able to concentrate on what they are saying without any difficulty because you are able to filter out all the background noise. Now a few metres away someone says your name and even though you have no idea what else they are saying, you hear your name loud and clear above the noise. This is the filter at work. Normally the background noise is filtered out, but when it contains an important piece of information, in this example your name, the filter lets that information through.

It turns out that the thirst reflex is also filtered. When all is well, like when we are young



and well hydrated, the message gets through the filter every time because the filter knows the message to drink is an important one. As we grow older (and these days this can begin at a young age) we start to respond to the message to drink with actions that don't actually do much to hydrate the system. Often we drink soft drinks or milk, later in life it's carbonated soft drinks, tea, coffee and alcoholic beverages. These drinks don't do much for our immediate hydration state because, unlike water, they need to be digested or they act as diuretics and actually dehydrate us.

The consequence of this is the message to drink begins to be filtered, because like the boy who cried wolf, our thirst reflex is not being heard. Ultimately the message can be lost altogether and often the most profoundly dehydrated individuals will report that they are never thirsty. (This isn't always the case because some dehydrated people speak of unquenchable thirst – the flip side of the same coin). One added consequence of the lost thirst reflex is that many people begin to confuse the thirst message with the hunger message. What is really a message to drink finds an answer in eating foods.

Resetting the reflex is not an easy process and requires attention to drinking water whenever the vaguest thirst is perceived, as this will serve to strengthen the reflex.

## WHAT SHOULD I DRINK AND HOW MUCH?

As you can see from what we have discussed about hydration, water has a special place in the list of what we should drink. Because it needs know no processing to be taken, water is unique and in most cases results in the most rapid improvements in hydration. There are however many other beverages to choose from and all have their place.

The choice of what kind of water to drink is quite large. There is good scientific evidence to support the choice of the purest water that is available. This may be bottled, filtered from a pristine local source or even, depending on where you live, out of the tap. The danger represented by the many potential contaminants of water will not be reviewed here in detail here, but we do know that many of the common contaminants in tap waters and water from unprotected sources pose health risks and have a direct effect on the hydration process.

The kind of water, which finds its origins in naturally occurring water in mountain streams or from underground sources, has recently been mimicked by various techniques and is now



GETTY IMAGES

available commercially in bottled form and via filter units that can be installed next to your kitchen tap. The evidence that these waters have more to offer than conventional purified water is compelling and well worth investigation.

## WHAT WILL HAPPEN WHEN I BECOME WELL HYDRATED?

The well hydrated individual will not become a superhero overnight but improvements in digestion, energy levels, sleeping patterns, skin quality, recover from illness and physical exertion and clarity of thought are often reported. Menstrual and menopausal symptoms often reduce, allergies and

sensitivities become less troublesome. Athletic performance is critically dependent on hydration not just because of its role in metabolism but because water is the basis of our temperature control mechanisms.

## A FINAL WORD

Hydration is the most important, yet most commonly overlooked, component of a holistic approach to wellness. Water is at the very basis of the functioning of our cells and our cells make up our tissues and organs. Keeping well hydrated means making sure that water is available in abundance, moving where it needs to move and sustaining the river of life. **15**