hydro-massage: Fitness,
Wellness & Health

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Moving in water promotes wellness and inner balance. Weightlessness and freedom from everyday stress help us find ourselves and stake out a new relation to our body. Body, soul, and spirit again seem as one.

We spend our days doing this and doing that. The body is the executive organ of the planning spirit. Our thoughts are uppermost and largely relegate bodily awareness to “blowing the whistle”, i.e. slips of the tongue, stumbling, clumsy movements, etc.

Swimming helps us get away from everyday routine, the body is exposed to multiple stimuli. Specific brain regions (the limbic system) process this more or less unconscious bodily awareness and classify it as holistic feeling.

And so the positive bodily stimuli of hydromassage result in a positive outlook on life:

- We feel fine all over!
- Our body takes centerstage, living energies bubble forth.
- Our movements are spontaneous and playful.
- We move from sheer joy of moving.

Bodily and psychic relaxation are interlocked. Relaxation needs time.

We must “take” time, even in the face of other pressing claims. But we must also “give” ourselves time – creating the right conditions and waiting till the body is inwardly ready.

In everyday life one thought drives out the other, each with an astounding life of its own. As relaxation increases, the flow of thought declines and our thinking drifts free. We find it easier to focus our minds. We clear our mental desks, separate the chalk from the chaff, do some psychic springcleaning.

Bodily relaxation and a measurable drop in muscular tone go together. Nerve impulses prompting the muscles to contract grow fewer, basic tension levels go down a little, our muscles relax. The same happens with mental and psychological relaxation in the brain. The frequency of intercommunication between the brain’s neural networks drops measurably.
When we engage in bodily-mental activities the brain-wave frequency is around 13–30/sec. (known as beta waves). When we are relaxed, i.e. both awake and inwardly at peace, frequencies between 8–12/sec. predominate (known as alpha waves).

Thus hydromassage can elevate bodily relaxation into a state of mental and emotional harmony.

Of course we can decide to share our relaxation with others and enjoy the experience of bathing together. This has a long tradition.

Bathing is a great social leveler and highlights the personal dimension. Undressing, we shed something of our social roles. What remains is the encounter: Between young and old, men and women, healthy bodies and sick.

Social harmony is all about bodily and psychic wellness.
During hydromassage the body is completely immersed in water, receiving physical stimuli from this element.

A more or less “cool” water temperature of 28° C is read by the body as a “wake-up call”. Cool water induces a bodily sensation of vitalization, at once activating and refreshing. The body protects itself against the perceived threat of chilling by mobilizing and burning up its energy stores, with a view to enhancing its heat production.

Thus the sympathetic part of the vegetative nervous system (responsible for preparing the body for activity) is more strongly engaged.

Apart from water temperature, the water itself moisturizes the outer skin layers. During the day we build up electric tension differentials between the moister bodily zones (major skin folds, armpits, backs of the arms and knees) and the dry zones (hands, head).

Moisturizing the skin with water leads to reduced tension differentials and a beneficial electric balance throughout the body.

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<th>Bodily effect</th>
<th>Water temperature</th>
<th>Buoyancy</th>
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<td>Bodies in water lose the same weight as that of the liquid they displace (Archimedes’ principle). Due to this buoyancy, an immersed 70 kg human body appears to weigh only 1/10 of its bodily weight, i.e. 7 kg.</td>
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Thus we can indulge the feeling of floating at ease in the water. Movements we would otherwise have to perform against gravity, and which we would therefore experience as “heavy duty”, are now perfectly easy. Joints can be fully bent or extended, otherwise a rare experience. In water afflicted joints are easier to move without pain.

This effect is particularly noticeable at joints, which carry most of the body’s weight - knees, hips, lumbar vertebrae.

Proactive bathing finds therapeutic use with those suffering from severe, painful joint degeneration or sport injuries or else in rehabilitation work.
Our body is naturally adapted to the prevailing air pressures.

While healthy robust persons are only susceptible to severe changes in air pressure (e.g., altitude sickness in mountain climbers), in sensitive persons even slight air pressure-induced fluctuations can lead to such complaints as migraine, metabolic failure and the like.

When we enter the water, the weight of the surrounding water mass acts as additional hydrostatic pressure. When we stand up to our shoulders in water, this exerts on us – spread over the entire immersed body surface – an additional pressure of some 1,200 kg. The body becomes marginally compressed, leading to a measurable circumference reduction of between one and more centimeters. Especially the veins and lymph vessels are affected by this pressure. Blood is pumped more strongly towards the heart.

To this the body reacts by upping its general blood circulation. The amount the heart pumps per minute increases. Meaning that despite beating at a slower rate, the heart achieves greater volume per beat and greater pressure. At the same time, inhalation and exhalation are deepened, with the blood being more strongly enriched with oxygen.
We rub and press a painful spot in order to soothe the pain. This age-old experience is probably at the bottom of all massaging.

As a result of pressing and rubbing, specialized perceptive cells in the skin (mechanoreceptors) transmit a large number of signals to the central nervous system, thus "blotting out" the perception of pain.

The changing pressures of the massaging water jet imparts motion to the tissue. This increasingly causes tiny blood vessels (capillaries) to open and copiously supply the body cells with blood. Such boosted local circulation can be externally detected by a temporary slight reddening of the skin.
Increased circulation of the blood also improves the metabolism of the affected body cells. More oxygen is procured and, at the same time, carbon dioxide is increasingly expelled. Equally, cells are provided with more nutrients and are enabled to discharge metabolic end products (waste products).

Under the pressure of the water jet, certain cells of the connective tissue (mastocytes) are stimulated to secrete histamine. This local-acting hormone has the property of attracting the body’s own antibodies to the affected site, the result being that eg. bacteria settling on deposits and metabolic remains are combated effectively.
Muscles accessible to hydro-massage

- **Shoulder/nape of the neck**: musculus trapezius (descendens)
- **Lower back area**: musculus latissimus dorsi
- **Buttock muscles**: musculus glutaeus medius, musculus glutaeus maximus
- **Upper thigh (rear)**: musculus semitendinosus, musculus biceps femoris
- **Calf muscles**: musculus gastrocnemius, musculus soleus, musculus plantaris, musculus plantaris major, musculus quadriceps femoris

The arms are covered with powerful muscles and can be massaged according to need.

Massaging the front of the lower thigh is inefficient as the muscles are largely covered by the shinbone.

Massaging the inner surfaces of the hands and the soles of the feet can be particularly vitalizing.

Such modern tasks as writing or typing on the computer keyboard place strain on the fingers and hands. Thus low-key tensions accumulate especially in the ball of the thumb. Hydro-massaging can, quite literally, help you “let go”.

The soles of the feet too, though much neglected, are vital body zones. Aside from their motor function (walking/standing) the soles of the feet are especially densely equipped with perceptive cells (proprioceptors). Our body, no less than our psyche, requires a steady stream of unconscious background data, namely “having firm ground under one’s feet”.

Massaging the foot’s reflex zones shows that the soles maintain multiple reflector links with the inner organs and the nervous system. Relaxing the soles by hydromassage stimulates the vegetative nervous system, as vitalizing as it is relaxing.
General remarks:

Healthy people find hydromassage a pleasant, relaxing, and vitalizing experience. But certain groups of persons should exercise caution.

Persons with cardiac/circulatory conditions: When the whole body is immersed in water, large amounts of blood are transported towards the heart by the water pressure. This might overstrain a weak heart.

Persons with vein conditions or varicose veins: Especially at warmer bathing temperatures, temporary circulatory failure may occur shortly after leaving the water. The blood collects in the legs – a brief blackout may result.

Persons on coagulation-stemming medication (Heparin, Marcumar): Such persons should not direct the water jet from the massage nozzles either too long or too intensively at any part of the body. Otherwise more or less large effusions of blood (blue spots, hematoma) may result.

Pregnant women: Women should avoid, especially during menstruation and pregnancy, exposing the small of the back – particularly the sacrum – to the jet. The sacrum maintains reflector links with the abdominal organs, which might be irritated thereby.

Persons with sensory impairment: In the absence of feedback about the intensity of the jet, it is advisable to first secure this information on a healthy part of the body.

Neck massage: Massaging the neck is not recommended, since vulnerable structures like vessels (the carotid - arteria carotis) and nerves (plexus brachialis).

Belly massage: The belly too (ie. the zone between the lower ribs and groin) should not directly be exposed to the jet, in order to prevent vegetative reactions on the part of the organs.

Musculature

Ideally the massage jet will encounter optimally relaxed tissue. This means the nozzles and grips should be so placed that the targeted muscles do not have to perform any work.

This can be achieved by:

- Placing the grips in front of the body when the back muscles are massaged.
- Standing on the right leg when the left one is massaged.
- Only gripping with the right hand when the left arm or left chest muscles are massaged.
- Supporting the head (at the chin or forehead) when the shoulder/nape of the neck is massaged.
**fluvo® product range:**
*Overview of hydro-massage nozzles*

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