

# Why is the sound massage perceived as beneficial?

By Christina M. Koller PhD  
Published in Klang-Massage\_Therapie (journal of European Sound Massage Therapy Association)

This contribution by Christina M. Koller PhD is a basic introduction to the topic of sound massage. These explanations would create a foundation based on which the various contributions of this journal can be understood less as individual aspects, but rather as parts of the whole.

I want, dear reader, to invite you, to address together the question of why the sound massage is actually found to be so beneficial. To this end, we initially want to look to the past, because the use of sounds is nothing new, but instead we can reflect on it's long history. Before we take a closer look, how we humans perceive and process sound or which multitudes of aspects regarding the effect of a sound massage play a role, I would like to begin with short definition or

explanation of terms Sound and Sound Massage to create a common basis for discussion.

The effects of sounds is always very complex and multifaceted, so that an overall picture can result only from the consideration of a variety of various aspects. This article and the results summarized in this magazine article would like to make a contribution.

## The use of sounds is nothing new

In Hinduism it is called " Nada Brahma - the world is sound " and as we now know from quantum physics , this is to be understood not just metaphorically, but literally, because all matter is ultimately vibration , therefore so is human . From this perspective, it is understandable that sounds since time immemorial had an important meaning in the lives of people and that they speak to us in such a special way. As a natural part of life sounds can be found used in healing , ritual , societal, or social and healing context. This knowledge is an important basis of music therapy work and especially in the last 15 years , many sound methods have emerged that are more likely to settle in the pre-therapy field ( cf. Koller , 2007, pp. 161-205 ) .



These sound methods were initially considered rather as the New Age or esoteric , but also increasingly interest professionals from education, counseling, therapy, as well as medicinal and healthcare professions . I was involved in recent years, in the context of my work at the Peter Hess Institute, in various publications that have contributed to the foundations of working with sounds . Above all, the ENT doctor and psychotherapist Dr. Uwe Ross PhD, whose comments will be discussed in more detail in this article . But what is it exactly , what arouses the fascination with the sounds ?

### **We start hearing and feeling**

The special effect of overtone rich sounds , such as the sound of the singing bowls is assumed , among other things , to be very similar to the sounds as are heard by an unborn child in the womb. And hearing and feeling are prenatally the first sensory experiences of people (see Spintge / Droh , 1992, p 13). The ear is the only sense organ that is fully developed before birth (see Tomatis , 1999, p 104). Only seven days after conception can be seen as a small dot and the first plant of the auditory vesicle is in the 5th week of

pregnancy. From the 18th week of pregnancy , the embryo begins to hear . So we start listening . And we start feeling . Thus, the fetus already reacted at the age of 8 weeks thereon, when it is touched on the lip, and the 14th week of pregnancy already includes the touch sensitivity to all body regions except the back and skull ( Huether , 2008, p 69) . Just these two senses are the ones stimulated with the sound massage .

This is also suspected as a reason why sounds (especially with people who because of their predisposition to illness or of an accident no longer have access to limited cognitive abilities), has a great appeal and evokes positive reactions. It seems to be linked to a memory that is far ahead of the development of cognitive thought processes.

But before we deal further with the perception of sounds, we want to define the term sound.

### **Sound - What is it?**

Sound is, physically, a vibration. This vibrations is transmitted through sound. The term sound in turn is understood as all that we can perceive with the human ear. Our so-called "listening window" moves within the range (in an ideal case) 16-25000 Herz (Hz). A very low



frequency, e.g. the rumble of thunder, is at 20 Hz, a very high frequency, created by the Fipsen mouse is about 3,000 Hz, and the average frequency of the human voice is about 200-400 Hz. Frequencies below the listening window are known as infrasound, above are referred to as ultrasonic. Here it becomes clear that the "standard" singing bowls by Peter Hess® products with their respective frequencies fall within the hearing range of humans and as described later are also in perceptible area. The frequencies of different types of singing bowl range as follows:

- Belly bowl: 106-935 Hz
- Heart bowl: 207 - 1180 Hz
- Universal bowl: 104 - 2800 Hz

It is important to know, that sound as the density wave, needs a propagation medium such as air or water and moves therein with a back and forth motion. The acoustic wave moves in the water much faster than in the air. In the air, at the sea level and at a temperature of about 20 degrees Celsius the acoustic wave moves with a speed of 340 meters / second, in the water even 1,500 meters / second (Dewhurst-Maddock, 1993, pp. 17-18). This is an important aspect for the sound massage, when you consider that the human body consists of about 80% water.

But not every acoustic wave is a sound. Physically, depending on the waveform it is distinguished between noise and a tone. In contrast to the orderly waveform of a tone, a noise is completely disordered. What is colloquially referred to as sound is actually always an interplay of multiple sine tones: a fundamental, so the fundamental and thus lowest vibrational and related overtones, so the harmonics resonating automatically to the fundamental. The overtones are a natural and ubiquitous phenomenon. For the sound vibrations, with overtones in integer ratios to the fundamental tone we do not just speak of a noise (see also Wolfgang Saus, journal 6/2008, pp. 58-60).

## **The sound of singing bowls**

How is it then with the sound of a singing bowl? Unlike instruments such as the piano or guitar, the sound of a singing bowl has no exact tone.

In the physical sense, the sound of a singing bowl behaves - in a typical manner to all of self-sounding metal instruments or drums "not harmoniously." This "non-harmonic" refers only to the ratio of harmonics to the fundamental, which is not exactly an integer. So is the law of harmonic overtones, as described by Pythagoras, not for singing bowls? Rather, the sound of a singing bowl is similar to a natural sound that is a combination of non-harmonic and harmonic sounds forms (p. 70 ff.) Even if the physical relationship of fundamental and harmonic tones of a singing bowl "is non-harmonious", their typical metallic sound in a listening experience is very well described by most people as "harmonious". This is its distinguishing feature.

## **The Peter Hess-Sound Massage**

understood primarily as a holistic relaxation method. Grossly simplified, various singing bowls are positioned on the clothed body and gently touched upon. This seems at first sight very simple, but the sound massage is more than just a technique and requires a sound background knowledge combined with a lot of (especially their own) experience and ability to apply them to the benefit of clients.

A distinction is made between "basic sound massage" and its resultant "individual sound massage". Three bowls types are used in the basic sound massage:

The joint or universal bowl, the heart bowl and the belly bowl.

They speak especially well to each specific body part. Overall, the Basic Sound Massage lasts about 45 minutes, plus the obligatory step - a preliminary talk and the quiet time to discover and perceive the changes as well as the final dialogue. In the Individual Sound Massage, the fixed elements of the base sound massage are individually changed to the needs

of the clients and supplemented by other sound massage elements. More singing bowls, gongs or cymbals may also be used there.

The Peter Hess-Sound Massage is to be regarded as a combination of three main factors:

- The technique of the sound massage
- The equipment: The Peter Hess ® therapy singing bowls
- The attitude of the sound massage practitioner, as it is taught at the Peter Hess Institute in Germany (PHI) and over 13 Peter Hess (PHAs) academies abroad.

### **Sound perception and sound processing**

With a sound massage, it comes to a comprehensive sound experience that goes far beyond the hearing of sounds - at least listening with the ears. The documentary "Touch the Sound" (2004) on the world-renowned percussionist Evelyn Glennie, who is nearly deaf herself since early childhood, is also an impressive testimony for this. With a sound massage we accept the sounds on one hand as a true acoustic listening experience (auditory perception). On the other hand, the sound vibrations of the singing bowls represents a vibro-tactile stimulus, which is recognized by the feeling (somatosensory perception). How this sound perception and processing is done in detail describes PD Dr. med Uwe Ross in his article "Sound work from neuro-psychological perspective" (Publisher Peter Hess, 2010, p 70). The following is a highly simplified representation of this description.

### **Hearing sounds**

When listening to the sound, when the sound wave hits the external ear, it is transmitted to the inner ear and transformed there into an electrical signal. The nerve impulse is sent to the brain via the auditory nerve and triggers in the involved brain area corresponding activation pattern. Even if up to now, we can not say exactly how and where the brain processes music and sounds, we can say that

listening to sounds is associated with extremely complex neurophysiological processes.

### **Feeling sounds**

The sound wave is processed as sensing impression by the somatosensory perception. Frequency spectrum perceptible by humans covers a range of about 0-400 Hz, with the optimal frequency of the human vibration sense at 150-300 Hz ( Bierbaumer & Schmidt , 2006).

The Peter Hess ® therapy singing bowls move, as described earlier in this perceptible to humans frequency range. The perception takes place, on one hand over the skin (exteroceptive) and on the other, on the inside of the body (interoceptive) . The stimulation of the body's interior can thereby turn in be divided to the perception of the muscles , tendons and ligaments (proprioception) and on the sensing receptors of our intestines (visceroception) . In everyday life, we are not aware of how much information we constantly receive from inside the body . Ross summarizes the effect of the sound massage on the somatosensory system and the concomitant activation of the corresponding brain regions as follows:

"The information comes via special nerve fibers along the rear strand of the spinal cord in the brain and activate here different areas of the brain that can be assigned to the respective information flows and the functions involved as follows:

- Somatosensory cortex (Extero and interoceptive information)
- Front cingulate cortex (attention, alertness)
- Front Insula (non-dominant hemisphere) (interoceptive information )

The Peter Hess-Sound Massage leads quickly into a state of deep relaxation and is associated with the corresponding physiological and psychological characteristics of a relaxation response.



## **Relaxation as a central aspect of the active sound massage**

Most people can relax quickly and deeply upon the first sound massage. The notion of relaxation is well established in our everyday language, but what exactly is relaxing and what happens there?

PD Dr. Uwe Ross answered this question in the aforementioned contribution. As a natural reaction pattern of the people and also other advanced living beings, relaxation is the result of a decrease in the sympathetic activity and activation of vagus function, which is made possible by a change in respiration (see article on page 35, The Peter Hess-Sound Massage - A highly effective method for stress - to promote internal resources) and this in turn allows for the regeneration of the body with the sensation of relaxation.

In all epochs of civilization and population groups, there have been an innate knowledge of the need for rest and relaxation and so a variety of practices has been developed, which provide the body recovery and thus protection against

overload. They all go hand in hand with certain physiological and psychological characteristics that are summarized under the term relaxation response (see Vaitl / Petermann, 2000). They are also observed in the relaxation during a sound massage.

### **Physiological Features**

When we speak of the physiological characteristics of relaxation, it is important to distinguish the various bodily systems, in which the relaxation response shows in different physiological characteristics (Ross, 2009, S.S. 148 ff):

- **Neuromuscular System:**

There is a decrease in the reflex activities, the number of active motor units and the EMG signals.

- **Cardio-vascular system:**

This results in a lowering of the heart rate, blood pressure and an expansion of the peripheral circulation (thermal sensation).

- **Respiration (Respiratory System)**



There is a general damping, the inspiration phase increases, decrease the oxygen consumption and carbon dioxide production and respiration becomes flatter and more uniform.

- **CNS (central nervous system):**

The visible increase in EEG alpha and theta waves.

- **Metabolism:**

The blood sugar level rises, the cholesterol level, the salivary cortisol and norepinephrine (the hormone and neurotransmitter most responsible for vigilant concentration, Transl.) decline.

- **Electrodermal properties:**

The skin resistance increases or decreases, the skin conductance (sweat gland activity) decreases.

Recent studies also show that the activation state of meditative relaxation comes to the following areas of the brain (cf. Ross, 2009):

- **Amygdala**

Part of the limbic system, which is responsible for emotions

- **Hippocampus**

Part of the limbic system, which is responsible for emotions and memory

- **Anterior cingulate cortex**

Associated with attention and alertness

- **Hypothalamus and midbrain**

Responsible for the autonomic control

## **Psychological Features**

Following psychological characteristics are typical to the experience of relaxation (cf. Ross, 2009):

- Mental freshness
- Inside-looking attention
- Increase awareness of different thresholds for external stimuli
- Increased associative thinking
- Affective indifference (sense of serenity) (see Derra, 2006; Vaitl / Petermann, 2000) «

## **Relaxation with Sound Massage does not need to be trained!**

Vaitl / Petermann (2006, p.21) describe relaxation methods as practicing procedures.

Sound massage here differs from methods such as autogenic training or meditation. It normally is not trained, but unfolds its relaxing effect usually already in the first time. Of course, "the conditioning effect" should be noted even with the sound massage. This means that the more often you get sound massages, the faster and easier it is to relax.

The relaxation is, as just described, associated with an altered bodily perceptions. Stress-related symptoms such as pain, restricted movement, sensibility and perception disorders, depression or anxiety may be alleviated. Also fear as a common stressor that negatively affects our bodies (cf. Fleischmeier, 1999, p 59) seems to be reduced by the sound massages. For the purposes of this stress-reducing effect, the sound massage (stress study / research report, published by Peter Hess) can make an important contribution to both strengthening health and preventing disease, as well as support recovery processes as a complementary method.

## **Loosen tension by sound vibrations**

On the physical level, the sound vibrations transmitted as ordering impulses to the body and causing a relaxation of the tissue tension, may contribute to the reduction of physical tension and (neuromuscular) blockades. The physiotherapist Alexander Beutel (cf. 2007, pp. 163 ff) describes the similarities between sound massage and classic massage, when he describes the vibration as one of the basic techniques of classic massage, which is also used in sound massage. This causes a tone regulation of striated muscle, slightly promoting blood circulation, thus enhancing the metabolism. In addition, through the use of vibration, a detoning action on the smooth musculature of the body is observed, so can e.g. spasms in the stomach, intestines and related disorders (such as constipation) be solved. The similarities between the manual lymphatic drainage massage and the sound massage should be also pointed out. The trained in the complex decongestive lymphatic massage physical therapist Nandi Hardt (cf.

2009, pp. 84-100), describes here the following aspects, as connecting both of these methods:

- proceeded very gently
- include a rhythm
- have a relaxing effect, liberating and harmonizing the entire system
- relieve pain
- strengthen the immune defense
- bring the "internal waters" of the body in motion and encourage them to flow.

### **Sound massage can also have vitalising effect**

In the research article presented by Prof. Dr. Maria Anna Pabst (p. 25-29) is this advise. It is possible that the rhythmic uniform structure of the singing bowl sounds also stimulates the regenerative and reorganization processes.

### **Other important aspects of the effect of sound massage**

As the book "The use of sound in educational fields of work" (2007, pp. 57-160) illustrated, the effects of sounds is very complex and multi-layered. The sounds appears, so to speak, multidimensional and address all aspects of human existence, where defined are numerous factors and other aspects with their multiple functioning (physically, mentally and emotionally). Some of them I would like to present in more detail below:

### **Emotional resonance and dialogic interaction**

How do the sounds appear on the spiritual, mental as well as emotional or soul level is closely related to the aspect of the interpersonal relationship. This of course

applies to all the methods that bring together two or more people, but in particular in sound massage because of the sound acting as a kind of "vehicle", as it is often described by therapists or counselors.

In neurobiological research the brain has been described as a "social institution." Our brain responds to a successful coexistence and rewards it with the release of chemical mediators that produce good feelings and health (Bauer, 2008). Man strives accordingly to interpersonal affection, appreciation and love.

The sounds seem to positively influence the emergence of an "emotional resonance" as the music therapist Barbara Gindl (2002 ) described. Gindl writes that this "heart connection" has in itself a transformative and healing potential.

In the Peter Hess-Sound Massage the relationship between sound massage practitioner and the client of a dialogic interaction - they confront each other as equal partners. Here we find parallels to Martin Buber's dialogical principle (article G. Ehnis, p 49-55). The attitude of the sound massage practitioner here is characterized by the following main aspects:

- mindfulness
- appreciation
- wholeness
- less-is-more principle
- solution and resource-orientation
- dialogic interaction



## **Sound massage and mindfulness**

The aspect of "mindfulness" also takes a significant emphasis in the context of sound massage. Mindfulness means here the value-free observation of what is. Without being distracted at the moment and be aware, (intentionally, willfully) of sensory perception, impressions, thoughts, feelings. Through this guided mindfulness, we can also say attention focusing, as it were, automatically enhances our perception for each area on which we focus on. This also contributes to the training of our sensibility. The essence of mindfulness is their value freedom, the feelings of confidence and serenity causes and strengthens.

In this regard there are also connections to the MBSR mindfulness training ( Mindfulness - Based Stress Reduction) . The "stress management through mindfulness" as this approach by Prof. Dr. Jon Kabat-Zinn (2006) is also called, assumes that it is increasingly more recognizable by the awareness from moment to moment , how and when stress is with us and as its effect can be neutralized and thus we expand the repertoire of choices. Similarly there is also the Stress Study / Research Report (published by Peter Hess ) .

The experiences and adventures during the sound space encounter are shared in obligatory conversation after a sound massage. By being verbalized , they can also be integrated into the everyday consciousness and contribute to the extension of ones own room to maneuver, so unused resources can be activated and used . An mindful attitude can change our lives. As writes Daniel J. Siegel (2007 , p.11) :

"It is scientifically accepted that to be mindful and aware, to devote ourselves to the richness and fullness of our experience in the here and now, causes positive changes in our physiology, the functions of our mind and our interpersonal relationships. To be fully present in our consciousness opens up new possibilities of well being in our lives. "

The focus of attention is manifested but also on a physical level, as imaging techniques are increasingly able to prove.

## **Sound and trance processes**

Following hypnotherapy approaches, the sound massage, in the hands of a relevant professional, will also provide targeted support processes , as described by PD Dr. Uwe Ross in the article " Sound work as hypnotherapy intervention for psychological and psychosomatic disorders " ( 2009).

Music, sound and rhythm always work in close connection with trance processes. Huether ( 2004b) describes the use of shamanic instruments related to altered states of alertness in direct contact with the intuitive part of our brain called the midbrain . The singing bowl , as Brück ( 2005, pp. 108/109 ) writes, is such a "trance inducing" instrument - even if still unknown whether it was originally . Thus, Japanese singing bowls , for example, (struck only once) are used in the mindfulness - awareness meditation for the identification of the transition between sound and silence .

## **The simplicity of the sounds as a sign of quality**

In the simplicity of the sounds is it's special quality. The sound of the singing bowl is a monochrome tone. Monochrome sounds are characterized by a single color, that is simple, uniform acoustic structure. It can consist of a chord, a sound mixture or even a sound. The sound of the sea or the rustling of the wind are natural monochrome sounds. But also the intrauterine sounds that perceives an embryo in the womb, or the monotonous murmur of a mantra or the sequence of rosary prayers have a monochrome sound structure (Willnow, 1997, pp. 105 -108). Monochrome sounds are also applied in various music or sound therapy methods (cf. Hess / Rittner, 1996) and are there specifically used to induce altered states of awake consciousness.

So the monochrome sounds of singing bowls and the recurring fundamental elements (from the basic sound massage) in an (individual) sound massage, offer the client a secure mediating structure, a safe space in which relaxation is easily possible.



The simplicity of the sounds created is therefore so valuable, as they are beyond a score of musical or non-musical - this is often described as an advantage as opposed to working with music. Thus, a viable atmosphere of trust, security, unconditional acceptance by a mindful counterpart (Sound Massage Practitioner) are enabled in the sound space. This is perceived by many people as beneficial and allows development at all levels. In addition, sounds in their simplicity in the fade-out, seem to lead to the quintessential. They elude the analyzing mind and lead it into a space of peace and tranquility.

### **Sounds can stimulate the body's reward system**

In his discussion of the question of the effects of the use of music (or here of sounds as an integral part of music) exerts on the human organism, Prof. Dr. Gerald Huether (2008) comes to the following conclusion:

"The unusual experience (access to and expression of own world of feelings, discovering a new form of communication) with simultaneous use of harmonized, synchronized and resonance generating effects of the medium music leads in most patients to positive stimulation of emotional centers" (p. 117)."

The neurological studies have shown that drugs are effective because they stimulate the dopamine system. This system can also be activated by other stimuli, such as chocolate or music (cf. Spitzer, 2003, p 187). For the effect of music (in this case sound as part of Music) delivers Spitzer (2003):

"It stimulates the body's reward system, which is also stimulated by sex or illicit drugs and that goes hand in hand with the release of dopamine [...] and of endogenous opioids [...]" (p. 188).

And the use of music perceived as pleasant (!) has yet another important effect, it reduces the activation of central nervous structures that signal unpleasant emotions such as Fear (see

singing in anxiety-provoking situations). The sounds can themselves have stimulating effect in this respect to the interactions of the limbic system. This is also a significant aspect for the subject of study (see page 44-48: Sound-coaching).

### **Each sound message is unique!**

Finally it should be noted that each sound message is unique - just as each person is unique. It is also dependent on the particular situation and daily condition. Therefore, there are no "recipes", but it comes in a joint dialogue between client and sound massage practitioner, a path of "self-discovery" to pursue. In the sound-relaxation we can recharge our batteries and come to rest. This means that the Peter Hess-Sound Massage is health strengthening and supports us to live a creative, self-determined and joyful life.

### **Literature**

- Dewhurst - Maddock , Olivea (1993 ) : Self-healing through sound and voice. Gaia Books Limited : London .
- Bierbaum , N . / Schmidt R. F. (2006) : Biological Psychology . 6 Ed Springer : Heidelberg .
- Vaitl , Dieter / Petermann, Franz (2000 ) : Handbook of relaxation method . 2 revised . Ed psychology publishing Union : Weinheim .
- Ross, Uwe (2010) : Sound work from a neuropsychological perspective. In : Peter Hess-sound methods in the context of research and science : Publisher Peter Hess: Uenzen . Page 70
- Ross, Uwe (2009) : Sound work as hypnotherapy intervention for psychological and psychosomatic disorders. In : sound methods in therapeutic practice . Publisher Peter Hess: Uenzen . Pp. 148-157 .
- Spintge , Ralph / Droh , Roland (1992 ) : Music Medicine . Physiological basis and practical applications . Gustav Fischer Stuttgart .
- Willms , Harm (1977 ) : Music and relaxation. Gustav Fischer Stuttgart .

Renz, Monika (1996) : Between primal and basic trust . Junfermann . Paderborn.

Tomatis , Alfred ( 1999 ) : Sound world womb. The beginnings of communication between mother and child. DTV: Munich.

Huether , Gerald / Krens , Inge (2008) : The mystery of the first nine months. Our earliest imprints . Beltz : Weinheim and Basel.

Huether , Gerald (2004) : The power of internal images. Cambridge University Press : Göttingen .

Huether , Gerald (2008) : On the art of putting ones brain in salutogenetic vibrations. In : Bossinger , Wolfgang , Eckle , Raymund ( ed.) ( 2008 ) : Vibration and Health . Dreamtime -Verlag, Battweiler .

Hess , Peter / Koller Christina M. (2009) : Sound methods in therapeutic practice . Publisher Peter Hess: Uenzen .

Saus, Wolfgang (2008) : Fascination overtone - What are overtones? In : Journal of sound massage therapy eV 6/2008 , pp. 58-60 .

Flachmeier , Horst R. (1999) : Light live with music. Midena : Munich.

Koller, Christina M. (2007) : The use of sounds in educational fields of work . Illustrated by sound pedagogy by Peter Hess . Verlag Dr. Kovac : Hamburg.

Bautel , Alexander ( 2007 ) : Sound Massage in the combined application of classical massage. In : Hess / Koller (2007 ) , pp. 163-167 .

Hess , Peter / Koller Christina M. (2007) : Find sound - work professionally with sound. Opinions and theoretical backgrounds from 3 Sound Congress 2006. Publisher Peter Hess: Uenzen .

Hardt, Nandi (2009) : Sound Massage in manual lymph drainage . In : Hess / Koller (2009 ) , pp. 84-100 .

Bauer, Joachim (2008) : Principle of Humanity. Why we cooperate with nature. Heyne : Munich.

Gindl , Barbara (2002) : Echo. The resonance of the soul. About basic principles of therapeutic relationship. Junfermann : Paderborn .

Faulstich, Joachim (2006) : The healing consciousness. Wonder and hope at the frontiers of medicine. Knauer : Munich.

Siegel, Daniel J. (2007) : The mindful brain. Arbor : Free office in the Black Forest.

Spitzer, Manfred (2003) : Learning. Brain research and the school of life . Spectrum - Academic Publisher .

Brück, Axel (2005) : Shamanic ritual music and the power of sound. Arun : Uhlstaedt - Kirchhasel .

Willnow , Christian ( 1997 ) : Therapy with monochrome tones - the sound led Trance by Strobel .

In : Berger, Lutz ( ed.) ( 1997 ) : Music , magic and medicine. New approaches to harmony and healing. Junfermann . Paderborn. Pp. 105-109 . (Dr.)

Hess , Peter / Rittner , Sabine (1996 ) : Trance. In : Decker -Voigt , Hans- Helmug / Knill , Paolo J. / Weymann , Eckhard (1996). Encyclopedia of music therapy . Hogrefe : Göttingen , Bern , Toronto, Seattle. Pp 395-398 .

Riedelsheimer , Thomas ( 2004 ) : DVD: Touch the Sound - A Sound Journey With Evelyn Glennie .



Author: Christina M. Koller PhD is a social scientist, has "earned" her doctorate at the University of Bamberg on the topic "The use of sounds in educational fields of work - as exemplified by the

sound pedagogy according to Peter Hess, "(Verlag Dr. Kovac, 2007). As a long-time assistant at the Peter Hess Institute, she was involved in various publications published by Peter Hess as co-editor and author.

Translation: Alex Andrzejewski (Maranta Sound Academy) 2013