

## **USE OF MINERALS IN THE ENVIRONMENT AND THEIR ROLE IN HEALTHCARE**

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**Abstract:** *Mineralogy is one of the basic branches of Geology, which studies the minerals, their chemical composition, crystal structure and physical properties. Some mineralogy disciplines include processes of appearance and formation of minerals, their classification, geographic spread, as well as the possibility of their use. Scientists dealing with mineralogy are called mineralogists. The minerals and crystals are everywhere around us and they have a wide range of use – in the creation of art works and decorative objects, in cosmetics, in official medicine, in modern technology, industry etc. All these uses include the application of crystals and minerals in treatment of people and the environment.*

### **Introduction**

A mineral is a chemical element or a compound which is normally crystallized and was created by the influence of geological processes; it has a certain chemical compositions, which does not have to be constant and a defined crystal condition which does not have to be crystallized. The minerals are the basic components of the Earth's crust. The term "mineral" does not refer only to the chemical composition, but also to the structure of the minerals. Two minerals can have the same chemical composition, but a different crystal tructure. The science that studies minerals is called mineralogy It has a fundamental role in geology. It is closely related to chemistry, physics, geo-tectonics, geo-physics, petrography and geo-chemistry. Due to the vasteness of its study field, mineralogy is subdivided into: crystallography, mineral physics, mineral chemistry, minerogenics, technical mineralogy, planetary and cosmic mineralogy, environmental mineralogy, biomineralogy mineral physiography, mineral systematic etc.

History: Mineralogy is one of the oldest sciences. The notion of mineralogy was first mentioned in 1636 by the Italian scientist B. Cezii from Modena. The first scientific work, specially dedicated to minerals, was entitled *On Stones* and written by Theophrastus (372-287 B.C.), who is considered as a founder of mineralogy. His book includes descriptions of 59 inorganic compounds, of which 32 minerals, 14 rocks, 6 organic compounds and 7 useful products. Important progress in the study of the minerals' features, their classification and systematization was achieved in 19<sup>th</sup> century mainly in the works of the Arab scientist Avicenna in the 11<sup>th</sup> century (980-1037). The German physician Georgius Agricola (1494-1555) was the first scientist to differenciate between minerals and rocks. As a practiscist, he paid special attention to the minerals' physical properties. The 18<sup>th</sup> century brought the clear distinction between the crystallographic and genetic tendencies in mineralogy. The chemical branch of mineralogy was developed at the end of the same century, by A. F. Cronstedt (1722-1765) and J. Berzelius (1779-1848). The 18th century witnessed the appearance of the so-called scholastic classification by Carl von Linné (1707-1778) of which the basis were the forms in which crystals appear. In the course of the 19<sup>th</sup> century, while the German schools and their representatives, as C.S. Weiss, F.E. Neumann, F. Mohs, C. F. Naumann and others studied the geometric qualities of minerals, in Russia, Severgin (1765-1826) and his followers were analyzing the mineral chemical properties. A great contributor to the determination of the chemical properties of minerals was the French scientist A. des Cloiseaux and the Russian mineralogist Fedorov (1853-1919). In 1912, using crystals to defract the x-rays, the German physicist Max von Laue (1879-1960) proved that the geometric laws, established by Fedorov, were correct for the structure of all real crystals. The founder of geochemistry, V. I. Vernadsky (1863-1945), established the x-ray structural study of minerals as one of the greatest discoveries. These achievements led to the establishment of the basis of crystal-chemistry, which studies the logical connection between the minerals' crystal structure and their chemical composition, and theirby their physical properties.

## Materials and methods

The role and the application of minerals and crystals in our lives is multifunctional. This article will concentrate on the use of crystals and minerals in the healing process, spiritual development, energy equilibrium, and all their contribution in the improvement of people's quality of life in general.

Minerals and crystals are all around us and serve for all kinds of purposes – in the manufacture of art works and decorative elements, in cosmetics, in official medicine, in modern technology, industry etc. The use of crystals and minerals in the healing of people and environment finds its place in all these multiple uses.

Crystals have been in use for healing treatments and harmonizing the living environment for thousands of years. They act through resonance and vibration, and can be useful in treatment of common diseases and efficient as first-aid cures, which is especially true for precious stone extracts.

The ancient healers knew that some crystals either give energy or soothe, but some of them are able to calm the overactive organ and stimulate the slow one.

The crystals used for healing can be used as pendants or lumps, or as a part of elixirs and teas. Creams can be made out of crystals as well.

The ground crystal loses its natural vibration absorbed from the location of its origin, and can not be used for healing. Processed crystals have gone through many energy changes, due to the grinding and the touch of many people, whose vibrations they have absorbed. Such a crystal, bought from a shop, bears the vibrations of the people who processed and touched it; it has more negative than positive effects on our organism.

The ground crystals worn as pendants can be used for protection and healing, but only after being subject to spiritual processing.

The crystals that we receive as gifts must be "cleaned" and programmed. Only afterwards can they have vibrations useful for us.

The chakras are energy centers absorbing the energy of the Sun and the planets, as well as the radiations of the planet Earth. Thus, the chakras provide our body with the energy necessary for our everyday life.

The energy centers (chakras) are very important for the mineral and crystal therapy (Fig. 1 and 2). They are points connected with certain level of our consciousness and the interven secretion glands: there are seven of them, connected with the physical body.

The entire system has various vibrations which correspond to the spectral colours, from red to orange, yellow, green, blue purple and white. The knowledge about these levels is of extreme importance for crystal therapy, as the first and basic choice is made according to colour.

Once the therapy is completed, the minerals are subjected to cleaning, firstly under running water and than in a water-filled utensil. After a certain time in the utensil, the minerals are filled with energy (under sunshine or moonlight, and together with other crystals).

The main energy centers have the following colours:

- First chakra – red colour (corresponding red and black minerals)
- Second chakra – orange colour (corresponding orange and light-brown minerals)
- Third chakra – yellow colour (yellow and gold-like minerals)
- Fourth chakra – green and pink colour (corresponding green and pink minerals)
- Fifth chakra – light blue colour (corresponding all nuances of blue colour)
- Sixth chakra – purple colour (corresponding purple and many dark blue minerals)
- Seventh chakra – white with gold overtones (corresponding white and transparent minerals, as well as minerals with gold overtones)

It has to be mentioned that there is a mineral (crystal) which is universal and able to replace all the others, being used in all levels: it is the best-known and the most used one, the quartz. It has the main role in therapies as it is universal in the sense of energy, including each of the four basic elements: soil, water, air and fire.

Quartz (Fig. 3) is one of the best-known and most used crystals. The Native Americans used it to protect their children, and the Buddhists for meditation. It is most frequently used in therapies, thanks to its capacity to clean and stimulate all the chakras. It is mostly used in crystal therapy as it is universal in the energy sense, bearing all of the four basic elements – soil, water, fire and air. It can be placed in all levels and body parts, replacing any other mineral (if we do not have or use any of them).

## Results

**First or root chakra (Fig. 4).** The minerals corresponding to this energy center are the red and black ones, mostly the following:

- Red minerals: red jasper, red tiger's eye, ruby, granate, heliotrope, red coral etc.

- Black minerals: black tourmaline, obsidian, hematite, magnetite, black onyx, smoky quartz etc.

*Ruby* – enhances immunity, improves the blood circulation, stimulates pure and strong love, strengthens the heart. Protects against anaemia and leukemia, regulates blood pressure.

*Granate* – regulates the heart rhythm and blood pressure, protects against anaemia and leukemia, improves the function of the genitalia and the liver, strengthens the bones, helps in arthritis and rheumatism.

*Red jasper* – gives strength and vitality, stops bleeding, protects wounds against infection, harmonizes the nervous system, improves immunity. Activates the genitalia, eases pregnancy and childbirth. Reduces pains and enhances the function of the glands.

*Hematite* – strengthens immunity, cures anaemia, releases poisonous matters and clogs from the blood vessels, stops bleeding.

*Obsidian* – heals bones after fractures, eases spine pains, improves immunity, raises the blood pressure, enhances concentration.

*Black onyx* – improves blood circulation, enhances the growth of the hair and nails.

*Black tourmaline* – protects against negative energy, helps in dreams and turns abstract thoughts into real ones. Improves self-control, discipline and perseverance. Eases rheumatism, period pains and blood circulation.

*Smoky quartz* – regenerates the muscles, helps in genitalia and kidney problems.

**Second or sexual chakra (Fig. 5).** Its corresponding minerals are the orange ones: carnelian, orange calcite, opal, sunstone, orange agate, topaz and moonstone (although greyish-white).

*Carnelian* – reduces anger and aggressivity, enhances courage, regulates the blood pressure, reduces sugar and regenerates the blood, improves circulation and stops bleeding.

*Sunstone* – gives joy to the person who wears it. Helps reduce high blood pressure, arteriosclerosis, asthma, joint and bone diseases, rheumatism, and soothes depression and exhaustion.

*Moonstone* – especially beneficial to women. It regulates the function of hormones, metabolism, blood sugar, helps in conception.

*Orange agate* – reduces pains. Protects the pregnant woman and its baby and facilitates childbirth.

**Third chakra or solar plexus (Fig. 6).** The minerals belonging to this chakra are the yellow ones, as: citrine, amber, tiger's eye, jasper, calcite, pyrite etc.

*Citrine* – enhances the immune system and metabolism, eases diabetes, helps the kidneys and the intestine, cleanses the digestive system and the glands, has an anti-depressive effect.

*Tiger's eye* – enhances life energy, soothes depression, helps in liver problems, asthma and bronchitis, reduces nervous and psychological diseases, brings emotional equilibrium and increases courage.

*Pyrite* – regulates the blood and the bile, the gland function, breathing, and releases the psychological blockages.

*Amber* – warms-up and strengthens the digestion system, the glands and the lungs. Eases the skin and bone problems.

**The fourth or heart chakra (Fig. 7).** The crystals corresponding to this chakra are the green and pink ones, as: emerald, malachite, jade, chrysoprase, heliotrope, green jasper, aventurine, epidote, praseme, green calcyte, green, tourmaline, rose quartz, rhodochrosite, rhodonite and kunzite.

*Emerald* – helps in epilepsy, schizophrenia, paranoia and psychosis. It is used in case of physical weakness, heart disorders, anaemia, inflammations, bone and muscle problems.

*Malachite* – eliminates negative energy from the organs. It is especially efficient in rheumatism, muscle sclerosis, breathing and metabolism problems, heart and blood pressure problems.

*Jade* – leaves positive effects in liver and kidney problems, and in problems with urinary duct, in case of rheumatism, heart and pressure problems, regulates metabolism.

*Aventurine* – helps against rheumatism, heart and kidney problems, urogenital system problems, in allergies and skin diseases, strengthens the hair and brings psychological peace and serenity.

*Rose quartz* – strong heart healer. Introduces tender love vibrations, eases emotional problems, heals the heart, strengthens the weak organism, helps in case of fatigue, low pressure, psychological problems.

**Sixth or throat chakra (Fig. 8).** The minerals corresponding to this chakra are light blue, blue or green-blue, as are: aquamarine, turquoise, blue sapphire, chalcedony, chrysocolla, lapis lazuli and sodalite.

*Aquamarine* – is beneficial for the throat, the thyroid gland, speech ability.

*Turquoise* – soothes all inflammation types, absorbs fears, protects and cleans the aura. Has a beneficial effect in cases of depression, sadness and shocks.

*Blue sapphire* – clears our thoughts, emotions and words, enhances concentration and calms, reduces skin problems and rheumatism, the eye and ear diseases, sinusite, strengthens the hair and the nails.

*Lapis lazuli* – has a healing effect on the body and the soul, relaxes and soothes, reduces pains and spasms, lowers the blood pressure, protects against negative energies. *Sodalite* – helps in balancing the internal secretion glands, activates metabolism, insulin, reduces blood pressure. Enhances clairvoyance, develops logical thinking and gives courage.

**The sixth chakra or the third eye (Fig. 9).** The minerals corresponding to this chakra are dark blue or purple ones, as: lapis lazuli, sodalite, azurite, indigo sapphire, hawk's eye, amethyst, sugylite, lepidolite, fluorite, charoite.

*Azurite* – a symbol of internal knowledge and love. It enhances concentration, good thoughts, intuition and clairvoyance.

*Indigo sapphire* – exceptionally efficient in the treatment of mental disorders. This crystal helps us differentiate between illusion and knowledge.

*Amethyst* – acts on several levels, both physical and spiritual. Reduces aggressivity, clears our aura, harmonizes the energy, clears the dreams, releases anger and fury, fear and anxiety. Helps us transform negative thoughts and emotions into universal love. Helps in all mental processes, in inspiration, intuition, meditation. It reduces pain in all levels, especially those in the head.

*Lepidolite* – helps relieve stress and strain and strengthens our nervous system.

*Fluorite* – leaves deep effect on all chakras, especially on the frontal one (the third eye), stimulates insight. Helps in concentration and learning, enhances mental activity, releases exam fear. It also heals old age senility, headache, flu and asthma.

*Charoite* – brings stability into the neurovegetative system and enhances immunity.

**The seventh or crown chakra (Fig. 10).** The minerals that correspond to this energy center are translucent, white, gold or purple, as are: the quartz, amethyst, fluorite, beryl, charoite, diamond, pearls etc.

*Quartz* – a translucent crystal which is universal for energy cleansing, harmonizing and filling in all levels, from the physical environment, our physical body and all organs, to the emotional and mental level. Relieves blockages, transforms negative energy into positive one, strengthens the entire organism. Enhances the effect of all other crystals.

*White topaz* – strengthens the entirety of our energy system, improves the activity of the heart, the internal secretion glands, the blood circulation, the nerves, cleanses the organs and the tissues from negative energy, improves the mood.

*Beryl* – helps open the chakras, penetrates deep into the aura, cleans it from bad energy layers and enlightens it.

## Conclusion

The purpose of the crystal can also be determined by its colour. Thus, the red and orange crystals enhance physical activity, improve energy circulation and activate the stagnant vibration. Such are the red or orange jasper, carnelian and calcite.

Yellow crystals, as citrine, tiger's eye or amber are recommended to enhance mental activity, equilibrium, appetite and digestion.

Green crystals introduce harmony, regenerate, inspire healing energy and positive emotions. Green-radiating crystals are the jade, chrysoprase, chrysopal, agate, aventurine, malachite.

The blue minerals inspire creativity and have a protective potential against dangerous radiations, underground waters, ores, different influences to which we are exposed without being aware of it, and which come from the soil, the universe, as well as against electromagnetic waves and other technology influences, caused from the modern civilization. Such protection is yielded by the aquamarine, calcedon, turquoise, hawk's eye, lapis lazuli and azurite.

The purple crystals introduce peace and harmony into the environment, relax and provide for easy sleep. Their pleasant vibrations soothe the thoughts and improve concentration. Amethyst is especially recommended for a pleasant sleep and for mental activities, as are learning and creative work.

The translucent or milky crystals act positively on all levels, as they introduce universal vibration. They introduce the clearness of the water, the glittering of the sky and the Sun into our home, and are therefore placed near the windows.



Fig. 1 and 2. Appropriate colours corresponding to the chakras

Fig. 3. Quartz

Fig. 4. The first chakra and its corresponding minerals

Fig. 5. The second chakra and its corresponding minerals

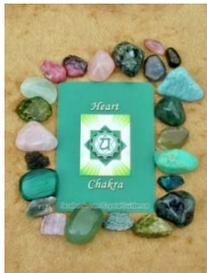


Fig. 6. The third chakra and its corresponding minerals

Fig. 7. The fourth chakra and its corresponding minerals

Fig. 8. The fifth chakra and its corresponding minerals

Fig. 9. The sixth chakra and its corresponding minerals

Fig. 10. The seventh chakra and its corresponding minerals

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